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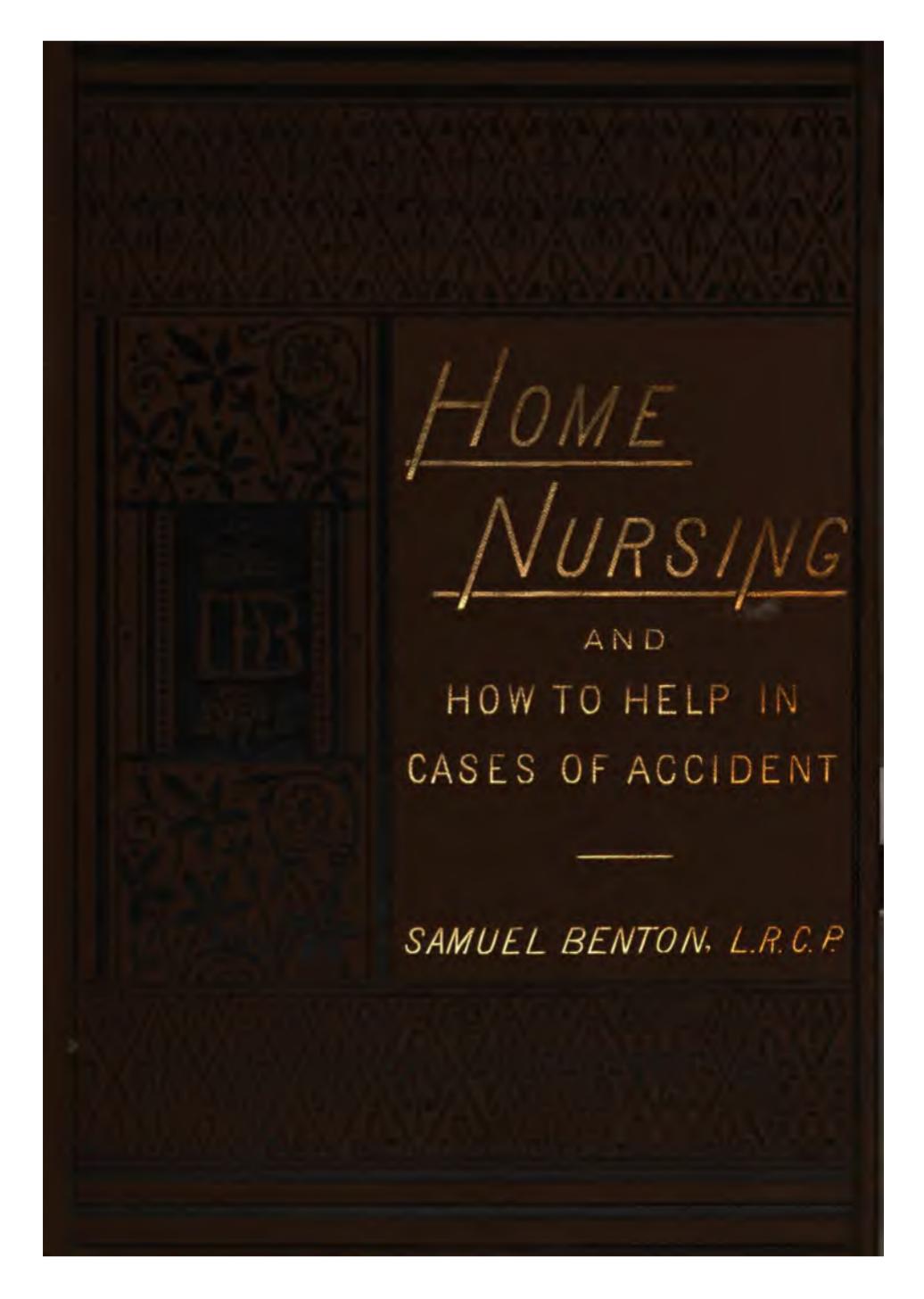
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NURSING

AND
HOW TO HELP IN
CASES OF ACCIDENT

SAMUEL BENTON, L.R.C.P.







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HOME NURSING

AND

HOW TO HELP IN CASES OF ACCIDENT.

BY

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P R E F A C E.

THERE have been a good many books written upon nursing which are most useful guides for Hospital Sisters and Nurses. This little work is intended for the perusal of women whose home ties do not permit of their gaining the advantages of hospital training.

Although fully aware that nursing cannot be learnt from a book, still a few hints and directions here laid down may be found useful.

My thanks are due to Mr. Thomas Godart, the Librarian at St. Bartholomew's Hospital, for drawing the plates, which I hope will assist the beginner in the art of bandaging, and help the reader in rendering aid in case of accident.

SAMUEL BENTON.

2 BENNETT STREET,
ST. JAMES'S STREET.
May 1880.

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HOME NURSING.

CHAPTER I.

Arrangement of a sick-room—Bedstead—Bedding—Bed-making—
Draw-sheet—Nurse's dress and behaviour—Preparation of patient
and sick-room for doctor's visit.

The Sick-room should be light and lofty, containing about 1500 cubic feet of space. The way to measure a room is to take the breadth and length in feet, multiply them together, and multiply the product by the height; if this sum is divided by the number of occupants, the result will be the exact number of cubic feet to each person. In the case of several persons living in the same room, the number of cubic feet should be not less than 500 per person.

Do not by choice nurse a patient in a bedroom which faces north or east, but select one which fronts south or south-west.

A room which gets plenty of light makes a great difference to our spirits in health, and we often hear of sick folk whose convalescence may be traced to the time when they changed their bedroom.

Be sure that the windows open at the top as well as at the bottom, and that there is a fireplace in the room.

Woollen curtains, also shutters, are inadmissible for a bedroom. The floor must be washed and kept scrupulously clean, and only a small strip of carpet or matting put down beside the bed, and in front of the fireplace, such a piece that can be easily removed, shaken, and cleaned every day. The furniture should be as scanty as possible, and of the simplest kind, such as a few cane-bottomed or wooden chairs, and a plain washstand, all of which must be washed occasionally with a sponge or damp cloth. The other necessities are—a small tea-kettle, a shallow saucepan, a piece of waterproof sheeting a yard and a half square, a small light bed-table made of deal, which may be covered with oilcloth, nailed on, and a graduated medicine glass. A bed-rope hung from the ceiling, or attached to the foot of the bed, to enable the patient to lift himself up or turn about in bed, is also a great comfort.

The Bedstead.—Do not attempt to nurse a case of severe illness in a four-poster, but choose a bedstead made of iron of the simplest design, and one easily reached across without any effort. For an adult patient the bed might be of the following dimensions, 6 ft. 3 in. by 2 ft. 10 in.

The height must vary according to the amount of bedding used; the top mattress ought to be very nearly

three feet from the floor. It makes a nurse's back ache attending to a patient who is lying on an unusually low bed. The bedstead should have no valance hung round it, for this hinders ventilation. For the same reason the dirty habit of housing boxes and rubbish under a bed must be prohibited.

A uniform temperature is all-important in a sick-room, so hang up a thermometer for reference. A movable folding screen is also a useful adjunct to a sick-room. Be careful to examine and turn out the contents of any cupboards. Place a few open dishes containing Condy's fluid and water about the room.

The bed should if possible be placed between the door and the fireplace, never up in the corner of the room, which places are usually surrounded by stagnant air; the attendant should be able to walk round three sides of the bed in comfort. In buying a child's bedstead, take care to purchase one in which the sides can be put up and down.

A fire in the room acts as an excellent ventilator; in the summer-time place a lamp in the fireplace occasionally.

In cases of long-standing severe illness, when the room is large enough, it is well to have two beds, so that the patient can be lifted from one to the other. If one bed alone is used, a couch can be kept in the adjoining room and wheeled in for the patient to lie on whilst his bed is being made.

The Bedding.—Avoid feather and flock mattresses,

those made of hair are decidedly the best. Feather beds are bad for patients, for if they are at all restless they soon find themselves on knots of feathers, or get themselves into a hole of relaxing discomfort. In nursing a case in which you only employ one bed in the room, have two horsehair mattresses, and place the bottom one at the top in remaking the bed.

Bed-making.—The bed must be made quite flat, except in cases of extreme exhaustion, when the bed may be made rather lower at the head, to counteract the painful tendency of the patient to slide down. It seems hardly necessary to impress upon you the vital importance of having all the bedding carefully aired. Do not air the sheets before the patient's fire, for should they be the least damp the moisture is diffused into the atmosphere of the sick-room; dry the sheets in another room, not the patient's. This same remark applies forcibly to the bad habit some nurses have of drying towels and napkins in a sick man's bed-chamber.

Be careful to have everything you will require ready before commencing to make the bed, for if the patient should be watching you, it is most irksome for him to wait whilst you go to hunt in some distant part of the house for a pillow-case or draw-sheet. If a nurse's assistant is inexperienced, give her full directions beyond the hearing of the patient; unnecessary talking worries a patient, and the fact of directions

having to be given makes him nervous at once, and causes involuntary starting of painful parts.

The top mattress may now be covered with a thin blanket ; a sheet of fine linen, one that has been well boiled, must now be placed very carefully and evenly all over the whole, and well tucked in round the mattress, taking care to avoid all wrinkles and creases.

The bolster must not be enveloped in this sheet, but should have a separate covering of its own. If the bolster is surrounded by the under sheet, and the patient is at all restless, the bed is soon made most uncomfortable. In cases of delirium the bolster may be tied advantageously to the head of the bed.

A small pocket should be made in the breast of the nightdress ; this at once remedies the wandering propensities of pocket-handkerchiefs, and as the patient is not likely to lie face downwards, it will not cause inconvenience.

The Draw-sheet is next to be put on across the middle of the bed, about the position of the patient's buttocks. Fold an old sheet lengthways, tuck one end in firmly about three inches, the other end fold up and tuck in the other side. Should the draw-sheet get soiled, it is then easily pulled gently under the patient and the soiled part folded up and tucked in ; of course when the bed is next made, or should the draw-sheet be much soiled, another one must be placed under the patient.

Now place the bolster in, and put it well up against

the head of the bed ; the pillow or pillows, according to the nature of the case, must now be placed, and be careful they are well shaken up. There are only a few who can shake a pillow up properly ; it requires practice and a light, quick handling. In some fever cases, where it is important to keep the head cool, pillows stuffed with oat chaff are preferable to feathers. Cover the whole with a sheet, one or two blankets and a counterpane, taking care that they are all scrupulously clean, and that the sheets are broad enough to tuck in well on both sides of the bed ; this will spare a restless patient the misery of a loose sheet. Long counterpanes touching the floor should be abolished, as they only serve as dust-traps, and often hide unemptied vessels, dirty clothes, old boots, etc.

In cases of severe illness, in which a patient has to be lifted on to a couch whilst his bed is being made, he had better be lifted back at that stage of the bed-making when the draw-sheet is fixed. A small piece of mackintosh with a napkin over it should be laid under any part likely to discharge ; this will often save sheets and mattresses getting soiled, and the napkins can be easily changed without disturbing the patient. It is quite possible and sometimes necessary in severe injuries, or when there is extreme weakness, to make a bed without removing the patient. An assistant will be needed. Insist on your patient lying down flat without pillow or bolster, as attempts to move only hamper the work. Fold up the draw and linen sheet

the whole length into as tight a roll as possible. Do not expose the patient, that is quite unjustifiable, but do this by putting your hands under the top bed-clothes and have the patient turned on his side with his back to you, and roll the sheets close up to the back; then have the clean linen and draw-sheet ready in a similar roll, half their width, and lay it alongside the other, turn the patient again with his face to you, by this means the soiled linen is set free and can be drawn quickly away. By depressing the bed with your hands under the patient, the roll of clean linen can be drawn under, unrolled and tucked in its place. In cases of fractures or injuries to the extremities, it is not a bad plan to lay two sheets across the bed, meeting a little below the middle; the lower one can then be easily changed while an assistant is holding the limb steady.

Nurse's Dress and Behaviour in Sick-room.—A nurse ought to dress in as plain a style possible, wearing a clean print or alpaca gown, or something that will wash when attending on an infectious case. Her clothes ought also to be cut short in the skirt, with plenty of room for the waist, and in such a manner that she can assume any position with ease and comfort.

A white cap and apron looks well and business-like, also a pair of scissors, with a pin-cushion, hanging from the waist, will be found useful. Creaking, high-heeled boots, or list slippers, must not be worn. A creaking footstep increases greatly the sufferings

of all people ; and if list slippers are worn, the patient is often severely tortured by the fright of some one coming upon him unawares, or, what is worse, the constant expectation of being frightened.

Unnecessary noise is not justifiable in a sick-room, but a nurse's manner should be natural, and she should speak so that the patient can hear without any strain. Whispering in a sick-room should be prohibited ; it is worse than a downright row.

A stealthy tread and hushed whispering go a long way to make some people delirious.

A nurse should never dawdle, and should never be in a hurry ; she should be gentle, deliberate, and firm. A nurse ought to cultivate a cheerful and happy disposition, for her manner is all-important, and if kindly and contented, a great source of comfort to her patient. An unsympathising, discontented manner will greatly retard convalescence, whereas by a kind and gentle behaviour a nurse can hasten and help materially a patient's recovery.

A woman, before she undertakes the work of nursing, should make up her mind to perform any duty, however disagreeable, unflinchingly. You may be called upon to attend a patient suffering from some revolting complaint, but to show disgust before the poor unfortunate sufferer is both uncharitable and unchristian-like ; also the least sign or gesture of distaste on the part of a nurse wounds most keenly a sick man's feelings.

Sick folks are often most irritable, and hard to please ; one must always remember that their tempers are being sorely tried by illness. Do not think the spoiling of patients is advocated ; far from it. A nurse must never hesitate to correct anything wrong ; it is part of her duty to help a patient to exercise self-control, but let every action be done with consideration.

Return a soft answer, be kind and forbearing, ready to make allowance, putting the best construction on things, and good-humouredly seek a pleasing explanation when you see it would help to clear up any misunderstanding.

Preparation of Patient and Sick-room for the Doctor's Visit.—The nurse should always have all the things that are likely to be wanted ready when the doctor is expected, such as clean towels, soap, basins, hot and cold water, a pen that will mark, ink, writing paper, pins, scissors, a teaspoon, lucifer matches ; in surgical cases, porringers to receive soiled dressings, lard, olive oil, bandages, strapping, cotton-wool, and lint.

Be ready on the spot to answer questions, and attentively to receive instructions. One word with respect to answering questions.

Always speak the simple truth ; do not on any account guess and prevaricate in order to hide your own shortcomings, as the doctor may act upon wrong information that you have supplied, and the patient's sufferings consequently enhanced.

If you are not certain, for instance, whether a person's bowels have been open, or whether they have not, say so.

When asked to prepare the patient's chest for examination by a physician, slip the clothes down, as then the lower part of the person can be kept covered.

In baring the abdomen, adjust the bed-clothes over the patient's hips, and pull the nightgown up. For internal examinations, make your patient lie on the left side, with the hips close to or a little over the side of the bed, and with the knees well drawn up. When the doctor asks to see a patient's leg, do not expose the whole body; merely untuck and fold the bed-clothes up from the foot of the bed, the patient lying at full length. If an operation is necessary, and it is known that the patient is going to have an anæsthetic administered, the patient must not have any food for at least four hours previously, also the nurse should take care to have a porringer handy in case of sickness. She had better beforehand get a list of the other things that are likely to be wanted, but hot and cold water, towels, waterproof sheeting, sponges, brandy, ice, and carbolic oil are invariably called for.

CHAPTER II.

Ventilation and warming—Feeding the sick—Administration of medicine and stimulants—Washing and lifting helpless patients—Bed-rests and bed-cradles—Regulation of visitors—Management of nurse's own health.

Ventilation and Warming do not consist in opening the window occasionally and keeping a big fire burning in the day-time and letting it out at night or towards early morning, when the patient usually feels chilly, and in more need of a fire. No! it requires more than that, in fact, a nurse ought to be acquainted with the rules of hygiene ; at all events, let her think before she practises, and ask herself the questions, Why am I going to do this thing, or that thing? Do not do things without a reason, or it will be merely an accident if our work is attended by good either to ourselves or to our fellow creatures. In the first place bear in mind that we breathe air into the lungs in order to purify our blood, and therefore it is necessary that the air we inspire should be pure, and contain a large quantity of a health-giving gas called oxygen ; during expiration we throw off from our lungs poisonous carbonic acid gas and watery vapour. Atmospheric air at a temperature of 60°, and

with the barometer at 30 inches, contains in every 100 parts by volume about 21 of oxygen, and nearly 79 of nitrogen.

It must be borne in mind that the composition of air is much influenced by season, temperature, and atmospheric pressure, for instance, 100 volumes at 80° contain an amount of oxygen equal only to 19·194 per cent. The degree of dryness of the air is important, for if the air be very dry, it will remove an undue amount of water, if the air when inspired be saturated with moisture, it cannot perform one of its functions, the removal of water. The skin is affected by the air the same as the lungs.

Air in its passage through the lungs is warmed, as anyone can prove by breathing on the back of their hand. Warm air ascends, being lighter than cold.

Now the secret of ventilation is to know how to get rid of the impure warm air that is floating about at the top of the room. If we can get this out there will be no difficulty, as nature abhors a vacuum ; other air will soon find its way in, either through the cracks, between the window sashes, under the door, or even through the brick walls. An open fireplace acts as a good ventilator, for the fire will not burn without air, and there is always a draught of warm air going up the chimney, and there must necessarily be a volume of air always moving in the room towards the fireplace to supply the fire.

When a doctor enters a sick room to visit an in-

fectious case, he usually seats himself on a chair beside the patient between the door and the fireplace on that side of the bed next the door.

Nurses should remember that most of their administrations should be carried on from this side; there is then little chance of infection, for the impure emanations from the patient are being carried towards the fireplace by the draught up the chimney. A ventilator or air brick introduced into the chimney at the top of the room is most useful; bed and sitting rooms ought not to be built without them. In introducing them afterwards, be careful about the style of ventilator, and that the chimney is suitably built; choose a ventilator with a glass valve, or you may get a smoky room.

An air trap by the side of the chimney flue will act, so long as there is a fire burning, to rarefy the air, but if an Archimedean screw be placed at the top of such a flue, it will induce an upward current when there is no fire, provided there be wind to move it. In most houses it is convenient to have a fanlight over the front door. It is much more difficult to ventilate a sick room in a private house than it is in a well built hospital ward, for newly arranged hospital wards have windows communicating with the fresh air on both sides, and at one or both ends, also often ventilating apparatuses in the ceilings and walls. A hospital sister watches every day in what quarter the wind is, and so arranges the opening of certain

windows at the top, so that a draught coming in at one part propels the foul air, collected near the ceiling, out at the other. Of course this means of ventilation is merely auxiliary to the continual change effected by the fireplaces, and if properly managed, the draught is not noticed by those walking about in the ward, nor is it perceptible to the occupants of beds. Whatever means we use for ventilation, we must be careful to admit pure air. Opening a window into a stuffy, confined court, which is so surrounded by houses that the wind and sun cannot percolate its depth, is of little use ; it is equally fruitless to seek fresh air from an ill lighted, stuffy corridor. Air always travels in a dwelling-house from the colder to the warmer rooms, so that in winter our ventilation may come from badly lighted passages or even closets. A very simple method of ventilating a room by the window without draught consists of the following plan. Get a carpenter to supply a piece of wood the width of the window frame, three or four inches deep, place it so that the sash will shut down upon this, instead of the window sill, by this means there will be obtained a direct communication with the outer air through the space at the middle of the window, between the upper and lower sashes. In a small sleeping room the window ought to be kept open a little way at the top night and day ; the night air in large cities is purer than the day air. Some people wonder how it is that they feel so dis-

inclined to get up, and are unrefreshed in the morning; this may be often accounted for by their sleeping in an ill ventilated room. A bed-room door and window are often to be found open during the day, when no one occupies the room, but at night they are carefully shut and fastened, and the curtains will be drawn, as if it were intended to suffocate the occupier instead of affording him healthful and refreshing rest during eight hours of sleep. Please do not think that cold air is pure or that warm air is necessarily foul. This is not true. Warm air may be perfectly pure, and some architects have so arranged that fresh air shall be admitted into a room, first being warmed by passing behind the stove or fire-place. Inhabited rooms should if possible have external walls on two sides, and air admitted through both. The openings for air should be small and many rather than few and large, and defended by perforated zinc. The connection between the inside and outside of the room should not be direct, but at an angle so that a direct current may not be produced.

A thermometer should be part of the necessary furniture of a sick-room, and frequently referred to, and the ventilation so arranged that the chamber is kept to one uniform temperature night and day. The doctor in attendance had better be consulted by the nurse, and asked at what temperature he wishes the sick-room kept. Different affections and illnesses

require different ranges of temperature : from 58° to 60° Fahrenheit is about the temperature to be aimed at, unless otherwise specified. Patients who are very ill, old folks and people with feeble circulation, feel the cold most towards the early morning ; this, then, is the time for putting coals on to the fire, covering your patient's legs with an extra wrap, or employing a foot-warmer. Take the precaution of placing a piece of flannel between the patient's skin and the warmer, or you may burn his feet. It is quite possible with ordinary care to effect all this without waking or disturbing your patient.

Feeding the Sick.—Ask the doctor to diet the patient, and pay the greatest attention to his instructions. It is useless asking a sick man such questions as, "Would you fancy this, or shall I get you that?" Before you have almost got the words out of your mouth, he will say, "No, thank you ; I can't take anything." "Oh, do try, dear, and take a little beef tea." "No, thanks, I couldn't touch it." A good nurse anticipates these answers, so will not irritate her patient by such questions. Dispense then with the formality of asking him whether he will take it, but simply serve up something that is good for him in the most dainty fashion. If the patient may be allowed to sit in bed, proceed to prop him up, and say, "I have brought you this small cup of beef tea" (or what not), "and you must please take it." Let this be said kindly, but with such firmness of manner that the

patient will at once see it is of no use fighting over the matter. Should the food be properly cooked, and nicely served up, he will then doubtless take it at once ; also, by not letting him know the nature of his food, and the time at which to expect it, he may be surprised into taking it. Do not think that idiosyncrasies respecting diet do not occur ; there are people who cannot digest eggs, others to whom a rabbit is a direct poison, and there are people who get their mouths covered with blisters if they attempt to eat a strawberry ; therefore it is sometimes folly to insist on a rigid line and rule in diet. Further, diet should always have relation to the power of a patient's digestion. Do not fall into that common error of good-natured people without any judgment, who are always striving to cram food into an unfortunate sufferer, whose stomach has no inclination to receive it.

The result of this proceeding, as Mr. J. H. Barnes has it, "is often the same as when a box of coals is tumbled on to a fire that has sunk very low ; the fire that by a little tact and judicious management might have been restored is swamped and extinguished."

Fever, delirious, and other severe cases require feeding frequently, not only by day, but especially is it important they should have nourishment during the night. The food offered must be prepared with the greatest care ; people when ill are very dainty and their appetites require much tempting. The way in

which the meal is served up is also of the utmost importance.

Be sure that the table linen, forks, spoons and plates are all scrupulously clean. Never let milk or anything of the sort rest in an open vessel on a chair by the patient or anywhere in the sick-room, for it soon gets impregnated with the impurities of the surrounding atmosphere.

Should a patient be unable to take all the nourishment that is offered him at one time, take it away altogether. It not only deteriorates in quality, but by being left always in sight of the patient, it gives him a distaste for it. If your patient begs a drink of water, do not refuse it ; a little well filtered, fresh, pure water may quench his thirst and will not hurt anybody. Remember breakfast must be served directly after the patient awakes ; the room can be cleaned and set in order afterwards. In delirious cases young and thoughtless nurses have actually been seen using a feeding cup, and trying to make a patient swallow lying down flat ; it is impossible for a man to swallow liquids in this position, and if he attempts to do so, it only brings on a fit of coughing by the food running into his windpipe.

First, raise your patient's head and shoulders a little by placing your left hand not next to the patient's nightdress, but underneath the pillow, then tickle his lips and tongue with a spoon to attract his attention before giving him his nourishment.

By this means you will probably get him to swallow comfortably.

Administration of Medicine and Stimulants.—

These two, medicine and stimulants, are bracketed together, for they each require equal care in their administration.

The medicine ought to be measured out into a properly measured medicine glass, and given regularly at the times stated, so also the stimulants. It is not enough to tell a doctor that a patient has taken a little brandy or a little port wine ; this does not convey anything sufficiently definite to assist him in the treatment.

Measure out the stimulants in the same way as you do the medicine, and note exactly how much the patient takes. When the doctor diets the patient, ask him what and how much stimulant, if any, the patient is to have in the twenty-four hours, and take care that the amount is spread equally over the night, as well as the day. If your patient is ordered, say, six ounces of brandy, let him have three ounces during the day, and three ounces at night. A good plan is to give the brandy, two tablespoonfuls for a dose, in half a tumbler of milk ; the mischievous effects of alcohol are not so marked when taken with food. Disagreeable tasting medicines should be given in such a way as to cause a patient as little disgust as possible. The nurse should always be careful that the glass used is perfectly clean. A good way of giving castor oil is, first to moisten the

patient's lips and clean his tongue by letting him suck a slice of lemon, then give him the oil on the top of a teaspoonful of brandy—caution him to open his mouth wide; also after he has swallowed it let him have another piece of lemon to suck. In this way he will hardly taste the oil at all. Castor oil is usually given early in the morning, all purgatives being more active when taken on an empty stomach.

Washing Patient.—Do not be led astray by the popular delusion that patients will catch cold if you wash them. Except in some fever eruptive cases which only require sponging, or in those where the doctor orders you not, always wash your patient's face, neck, chest, and armpits with soap and tepid water, using an ordinary washing-glove or soft piece of flannel; also his feet and legs ought to be washed at least every other morning. In cases where there is prolonged pressure, the patient lying flat on his back, it is especially important, to prevent sores, that such parts of the body as are in perpetual contact with the bedclothes should be washed most carefully every day, and kept free from perspiration. Be careful to have a good supply of clean linen and everything else you may require ready before you commence; rub and dry him well. I have often known patients who have not had half-an-hour's rest for days, go off into a most delightful sleep, after being thoroughly washed and their bed properly made by an intelligent nurse. To lift or move a patient who is very weak,

take two long broom handles or common clothes-line props, and without touching or disturbing the person, roll the sheet and under blanket on each side of the bed over these poles; he can then easily be lifted in this improvised hammock.

Bed-rests.—Bed-rests will be found a great comfort to patients who are obliged to remain in bed any length of time. A good one can be improvised by placing a cane-bottomed chair upside down in bed and padding it well with pillows. There are invalid tables sold, which can be made to stand on the floor, adjusted by means of a screw to the requisite height, and extended across the bed; these are very useful for patients able to feed themselves, also to stand books on, and for toys in the case of children.

Bed-cradles, to protect an inflamed or broken leg from the weight of the bedclothes, can be made by a carpenter, by taking two half hoops of iron, forming a semi-circular arch, and joined together by three cross-pieces of wood.

Regulation of Visitors.—Too many visitors must necessarily excite a patient, and is bad for anyone who is very ill, but it is equally injurious for a nurse persistently to prevent a patient seeing some one whom he particularly wishes to see. If a man comes to see a sick person who is ill in bed on business, be careful to place a chair for the visitor in such a position that the patient can see and hear him without any strain. A good nurse will of course absent

herself from the room for a short time, so that the patient and visitor may discuss any matter of a private nature, but let her always say where she is going and be within calling. The nurse in announcing the name of the visitor can at the same time inquire if her patient wishes him to stay long. Chattering and argumentative visitors ought to be admitted, or refused admission, and told when to go at the nurse's discretion. It is advisable for a nurse always in severe acute illness to get instructions laid down by the medical man as to visitors. In fever and infectious diseases, visitors should not visit the patient when in a state of exhaustion or fasting, as they are then much more liable to absorb the miasmas.

Management of Nurse's own Health.—There is one thing a nurse must always keep steadily in view, that is, her duty to herself; it is her duty to keep herself in good bodily health. In a well organised hospital she cannot fail to live with regularity, there being a proper amount of time set apart for rest, food and recreation, but in private nursing many temptations for indulgence will beset her path. To maintain her health she must exercise to the utmost self-control, and be temperate in all things. Ill-directed zeal will surely defeat its object, for if the nurse does not allow herself sufficient rest and recreation, she will certainly sooner or later break down and become useless. A debilitated person is a fitting soil for contagion, there-

fore a nurse attending on a medical case must keep a careful watch over her own health, or she may catch the infectious disease from which her patient is suffering ; or should she be nursing a surgical case, blood poisoning runs a much more serious course when its influence is brought to bear upon a weakened constitution. Women are often addicted to dosing themselves with powerful aperients ; their digestion and health is often impaired in this way. The bowels may be best regulated by daily exercise, and always obeying with regularity the dictates of nature. In private or other nursing always say when you are going out, either for a couple of hours, or for the whole day. Some people think they will slip out for a walk without their patient knowing it. In this she will most likely be disappointed, the patient losing all confidence in his nurse, besides always worrying his brain for fear she should be about to absent herself without giving him due and proper warning of her intentions.

Exercise and recreation is as important for a nurse as it is for other people ; as Miss Nightingale has it, " Let whoever is in *charge* keep this simple question in her head (not, How can I always do this right thing myself? but), How can I provide for this right thing to be always done ? "

CHAPTER III.

Observation of symptoms—Rigors—Sleep—Pain—Posture—The skin
—Appetite—Vomiting—Cough—Expectoration—Effect of remedies
—Bowels—Urine—Tongue—Temperature taking—Respiratory
movements—Pulse.

Observation of Symptoms.—By symptoms is meant certain signs or tokens of a deranged state of health which happen concurrently in different diseases. To be able to give an intelligent account of these signs and symptoms to the doctor, is to help him all-importantly in his treatment. It is difficult at first to observe and note various symptoms, but practice will make this quite easy. Whatever you do or say, be accurate, be truthful. Do not lie to hide your own negligences, as in this way you may endanger your patient's life. When asked a question, be candid, do not guess or attempt to answer by commencing, "I think ;" say rather you do not know.

Inaccurate observation is not only useless, but misleading. Generalities in nursing are useless ; take nothing for granted ; verify everything by your own personal investigation, and with every known means of test. An untruthful, equivocating woman is useless as a nurse. In nursing a severe case you had better

commence by writing the patient's name, age, and day of the month on the top of a piece of foolscap paper, and take a note of everything, at the time it occurs, and when it occurs.

Rigors or Shivering Fits, during which a patient first feels hot and then cold, are often the precursors of serious complications. Some diseases are ushered in by a single rigor, others by a succession of shivering fits. To make the clinical or bed-side notes of a fever case, or a case of inflammation of some important organ, complete, they ought to commence from the first rigor.

Sleep.—It is the want of sleep and local rest which causes half the miseries and diseases flesh is heir to. A certain amount of sleep is essential to health. Now the remarks made about the quantity of stimulants taken, apply with equal force to this subject—sleep. It is not enough for you to tell a surgeon that the patient has slept a little ; this does not help him at all. People have different ideas of what constitutes a little ; also is he to understand that the patient slept soundly, or has he been disturbed by horrible dreams, and had merely a restless, unrefreshing doze ? In making a note of sleep, describe what kind of sleep, and state from and to what hour he slept. If the night nurse would make some such note as this, "Slept soundly from twenty minutes to ten until a quarter to twelve, and that he slept again with one intermission of eighteen minutes from half past two until six o'clock

in the morning;" or, that "the patient dozed, restlessly kicking his bedclothes about, from half past ten until a quarter past eleven, at three o'clock he dozed again, interrupted by chattering delirium until half past four," the information to be gathered from this description would be a great help to the physician or surgeon in the treatment of his patient. In the first case, he would see at a glance that his patient had had two hours' good sound sleep in the early part of the night, which is more valuable than sleep procured towards morning or at day-break ; in the second case the doctor would gather that his patient had passed a restless night, accompanied by muttering delirium and horrid dreams. This latter description would set him thinking, was this restlessness due to want of nourishment, or was it due to some other cause ? Then, again, some patients cannot sleep because they are in pain.

Pain.—It is the nurse's duty to observe and note the sort of pain, whether dull, aching pain, or stabbing, throbbing pain, also its duration and exact position, whether in calf of leg, ear, abdomen, or what not. She must also note whether the pain is persistent or intermittent, if relieved or not by the applications ordered, whether the pain disappears on the patient's attention being temporarily distracted, if pressure relieves or increases it.

Posture.—The patient is sure to get into a position which will give him the minimum of pain and suffering, therefore a nurse must watch what position her charge

usually assumes ; this will help the doctor considerably in arriving at a correct diagnosis, that is to say, help him to find out what is the matter with the patient.

People with severe pain in the abdomen, for instance, lie in bed with their knees drawn up ; others suffering from advanced heart disease sit up in bed, leaning a little forward, and requiring to be propped up by pillows. Notice particularly the posture of the body during sleep ; before getting off to sleep a patient will assume the easiest posture in which to lie. In pleurisy followed by effusion of fluid, the affected side is chosen to lie upon, for the healthy lung can then the more readily perform the extra strain of work which is thrown upon it. In severe cases of protracted illness, when the sufferer becomes very weak and exhausted, there is a tendency for the patient to sink down in bed ; a nurse cannot give these too much attention, and must frequently lift them up and change their position. This tendency may also be borne in mind when making the bed, the mattress raised gradually towards the foot.

In doubtful surgical cases, especially in obscure injuries or diseases of joints, a knowledge of the position in which the limb falls during sleep is of immense value to the surgeon.

The Skin.—Note if the patient perspires freely, also state whether the skin is dry, moist, hot, cold, or clammy.

Phthisical patients often perspire profusely ; they sometimes wake up with their nightdress completely wet through. Excessive perspiration is a symptom of weakness and great debility ; injudiciously fed children, the subjects of rickets, also perspire a great deal, especially about the head. In the early stages of fever, where symptoms are not sufficiently marked for the doctor to pronounce positively the disease of which his patient is suffering, the nurse should look out diligently for any rash that may appear. Notice particularly on what part of the body it first appears, whether on the forehead, chest, extremities, or abdomen ; also observe the rash, whether raised or not from the surface ; if papular or vesicular ; accompanied by itching ; its colour, and whether removed temporarily by pressure.

Appetite.—State whether the patient seems to relish his food, or, on the contrary, note if he suffers from a sense of heaviness and discomfort after meals, and complains of nausea, giddiness, or irritability.

Amongst other symptoms requiring attention are a want of appetite, an unnatural craving for food, or excessive thirst.

Vomiting.—Observe the nature of the vomited matter. Does it consist of partly digested or undigested food ?

State the hour of the day the patient usually vomits, if after food or at other times. Vomited blood is dark in colour, due to the action of the

various digestive juices, it is also often excessive in quantity; always measure the quantity, and make sure whether or not it is mixed with particles of food, or bile stained.

Whether it has the appearance of "coffee grounds" or evolves a fæcal odour; if attended or not with pain; if persistent or intermittent. Unless the nurse has had some experience, and can accurately describe the nature of the vomited material, she had better save the vomit in a clean utensil that has a cover to it, and keep it in another room for the doctor's inspection.

Cough.—A cough may be due to an affection of the throat, bronchial tubes, or stomach. It is also occasioned by disease of the lungs or heart. Notice whether it is a dry cough, cough accompanied with pain or expectoration.

Observe further if the cough is persistent or occurring in fits, also note the time of the day or night when the cough is most troublesome. The first symptoms of spitting blood are important. Blood that is coughed up from the lungs is usually of a bright red colour; state whether it is pure blood that is coughed up, or sputa streaked with blood.

The Expectoration.—Whether watery, frothy, streaked with blood, lumpy, rusty coloured, or purulent (like matter in appearance), also observe the quantity, and whether mixed or not mixed with vomited materials. In cleaning out the utensil note

whether the expectoration clings to the side of the vessel ; say if the patient coughs it up with ease or difficulty, accompanied or not with pain ; state if the sputa is offensive.

The effect of remedies and the changes they produce in the patient must be carefully watched. Some poisonous drugs are very active in their effect, certain constitutions being more susceptible of their influence than others ; it is therefore the nurse's duty carefully to watch the effect of such remedies as Opium, Mercury, Arsenic and Strychnine, which require the greatest care in their administration.

Opium, if pushed too far, produces coldness of the extremities, contraction of the pupils, laboured respiration, and insensibility ; old people and young children are very susceptible to the influence of this drug. Mercury may cause dryness of the throat, tenderness of the gums, and salivation. Arsenic causes headache, griping pains in the abdomen, and running at the nose and eyes. Strychnine, twitching of the muscles and convulsions. Quinine produces headache, confusion of ideas, and even delirium, in large doses.

The effect of local applications should be watched and understood. Some liniments are ordered to ease pain, others to produce irritation of the skin ; plaisters, likewise, are for support and strengthening purposes.

Such remedies as blisters and cataplasms ought

also to be watched, for their action is much quicker on the skin of some people than others.

The Bowels.—Frequency and character of fæces. Ascertain the number of times the bowels have been moved in the last twenty-four hours. Satisfy yourself whether the motion is liquid or formed. The stools of patients suffering from jaundice are clay-coloured, and those taking iron mixtures are black.

A slight watery discharge is not necessarily diarrhœa; a patient with this symptom may be suffering from impacted fæces. The nurse should notice if the fæces are streaked with blood or mucus, whether passed easily, painfully, with difficulty, or unconsciously.

If the patient passes worms, the nurse ought to be able to answer the question: Is the patient suffering from small thread-worms, flat tape-worms, or round worms?

Should she be not quite certain, the stool had better be saved for the doctor's inspection, but never let it remain in the sick-room.

Except otherwise ordered, all evacuations should be carried away in a covered utensil, and emptied immediately they are passed; the vessel must be scoured and carefully disinfected directly afterwards.

The Urine in health is of a pale amber colour, and varies in quantity in accordance with the amount of exercise taken, the liquids swallowed, and the state of

the weather. An adult usually passes about two pints and a half in twenty-four hours. In the summer time, excretion of fluids from the skin is more active, so that there is not so much urine made as in the winter. A patient passes a quantity of water, pale and limpid in appearance, in some diseases, such as diabetes; whereas in inflammation of the kidneys, idiopathic (that is, originating from some undiscovered cause), or the sequel of scarlet fever, the urine may be very scanty, of a brownish hue, containing blood corpuscles. It is always difficult accurately to measure the quantity of urine passed, for a patient unintentionally may urinate when going to stool, but a rough estimate may usually be formed. If a nurse observes any peculiarity about the urine, she had better save a small quantity for the doctor to see and examine: always take care that the utensil it is passed in, and the phial it is saved in, be scrupulously clean.

In private practice the doctor often brings his chemicals and test tubes with him; have some lucifer matches handy, as probably he will require to light a spirit lamp. Urine voided the first thing in the morning is most suitable for analysis. The frequency and manner of passing water is of importance for diagnostic purposes. State therefore whether the act of micturition is natural or otherwise. In cases of stone in the bladder, patients pass water more frequently but in smaller quantities than in health,

and with an intermittent stream ; the act is also accompanied with pain.

The Tongue.—The appearance of this organ gives valuable aid to a medical man. Notice whether it is clean, swollen, or coated with black, brown, or white fur, also if it be red and glazed, or pale and flabby. Feel the tongue with the tip of the finger and satisfy yourself whether it be dry or moist. It is perhaps hardly necessary to remind you that observations on the tongue to be of any value must be made before, not after, a patient has taken nourishment. An experienced eye further notes the manner in which a tongue is protruded ; hesitatingly, hurriedly withdrawn, as in some nervous affections, or pushed out one-sided, indicative of paralysis.

Patients who are being racked in the height of a severe fever protrude their tongue tremulously, which points to extreme exhaustion. Notice if there are any pimples or ulcers about the mouth, also whether the tongue is indented at its edges by contact with the teeth.

Inquire if the sense of taste is impaired ; in some diseases affecting the nerves of the tongue, it will be found that the patient can only taste food on one side of the tongue. During a severe illness the way in which a tongue begins to clean helps considerably in forming a prognosis. If the tongue primarily cleans on the dorsum or in the middle, leaving a red glossy surface, this points to a tedious and uncertain recovery ;

whereas, should it begin to clean at the edges, we may look forward hopefully to convalescence ; on the other hand, should the fur peel off in crusts, leaving a raw, ugly looking surface, the prognosis is bad. Sometimes the tongue is dry in the centre, and moist at the edges. The nurse should be alive to the fact that certain medicines affect the appearance of the tongue ; mixtures containing iron, for instance, blacken the surface of the tongue, and if long continued discolour the teeth.

Notes on Temperature taking.—A nurse ought to learn how to use a clinical thermometer. A few practical lessons would teach her more readily than pages of written directions.

The ranges of temperature in disease can be accurately measured by observing the expansion of mercury in a glass tube. A clinical thermometer is a graduated glass tube, of a recognised calibre, closed at one end, and with a bulb containing mercury opening into the tube at the other. Fahrenheit's scale is most used in this country ; he fixed his freezing point at 32° , and boiling point at 212° . The normal temperature, that is to say, the body temperature in health of a human being, is 98.2° Fahrenheit ; the temperature in disease may rise to 105° F., or even more. In order to take a temperature, procure a clinical thermometer, place the bulb containing the mercury in the patient's mouth, or arm-pit, leave it there for eight or ten minutes, then observe how high

the indicator has risen. If you take a temperature in the mouth, be careful first to caution your patient that the instrument is made of glass ; he may close his lips, but must not bite it. See also that the register is shaken down below 90°. Should you choose the axilla or arm-pit, which is as good a place as any for taking a temperature, be sure you place the bulb next to the patient's skin. Do not let the nightdress or any other article of clothing intervene ; this is a fertile source of inaccuracy. The temperature is usually taken night and morning, in severe cases oftener. Be careful to take the morning temperature before the patient is washed, and at the same time each day.

Respiratory Movements.—Respiration takes place in health about eighteen times a minute. It consists of two acts, the act of inspiration, and the act of expiration. In inspiration the chest is enlarged by elevating the ribs and depressing the diaphragm muscle, situated between and dividing the chest from the abdomen.

During expiration the chest is diminished by depressing the ribs, and elevating the diaphragm. After great exertion, in fever cases, and diseases of the heart or lungs, the acts of inspiration and expiration are very much hurried ; if any one is aware that their respiratory movements are being watched, this so influences the state of the nervous system, that even if a man tried, it would be impossible for him to breathe naturally. It is not very difficult to take the respirations

of a child, especially a baby, after a little practice. In counting the respirations of an adult, do not "stand over your patient, watch in hand, placing one hand on his chest;" directions which have appeared in print.

The number of the respirations, to be of any value, must be noted when the patient is unaware that you are observing him, for instance, when he is asleep; or you may take his hand, and whilst apparently engaged feeling the volume and tone of the pulse, number the respirations by watching the movements of the bed-clothes. In order to do this, you would require a watch with a second-hand. Merely counting the number of the respiratory movements is not all that a nurse should observe. She should notice whether her patient is breathing with ease and comfort, laboriously or noisily, also notice if the act of expiration or that of inspiration is unnaturally prolonged, and whether the respiratory movements are shallow. A nurse ought to make herself acquainted with the catching inspiration accompanied by a "crowing" sound, the whistling, squeaking sounds of affections of the wind-pipe; the wheezing sounds attending asthmatical patients; "stertorous" breathing, as it is called, respiration accompanied by loud snoring inspiration and puffing out of the cheeks during expiration. This latter is very serious, and denotes insensibility from some cause, either from apoplexy, or following severe injury to the head, causing pressure on the brain.

If a nurse, who has been watching a patient for

some time breathing quietly, should notice that his respirations have gradually become stertorous, it is her duty at once to report the same to a medical man, for this symptom denotes serious change for the worse.

The Pulse.—There is no particular harm in a nurse feeling a patient's pulse for her own instruction, but I should recommend her not to choose the time of the doctor's visit for such experiments, nor should she, unless asked, make any note or comment upon it. Hospital sisters cannot all be relied on for taking pulse properly.

To begin with, besides an educated sense of touch one requires a knowledge of the structure and exact position of an artery to take a pulse.

The pulse in health beats with even force and volume about eighty times a minute in an adult.

In old age this is not quite so frequent, and in young children the pulse beats much more quickly.

What is a normal pulse in one individual is an abnormal pulse in another ; the pulse varies before and after meals, also it is influenced immensely by different constitutional temperaments.

CHAPTER IV.

Cleanliness—Baths—Wet-sheet packing—The application of local remedies—Poultices—Fomentations—Enemata—Blisters—Leeches—Cupping—Ice to the head—Drops to the eye—Application and removal of strapping.

Cleanliness.—A great deal might be said and written about this subject, not only as a means of hastening the cure of disease, but that of far more import, the prevention of disease. Nurses should always be clean and tidy in their dress, clean and tidy in their surroundings. The sick-room should especially be kept scrupulously clean and neat, not only as a matter of appearance, but to preserve health to the healthy, and to secure its restoration to the sick. Dirty hands are often a means of disseminating disease, such as pyæmia and erysipelas. Pause for a moment, and think how revolting it is for a sick person to have food served up by a nurse with dirty hands.

Baths.—These are given for cleanliness, or may be ordered to promote the free action of the skin ; to give a sudden shock to the system, or medicated for the treatment of disease.

Bathing should not be resorted to directly after a

meal, nor without advice in cases of illness. It is better to take a cold bath when perspiring than to sit by the sea or river side to get cool after perspiring, and then go into the water. Cold baths suit most people. If one feels comfortable and has a pleasant glow after taking a cold bath, this is a sure sign that it is beneficial. On the other hand, as soon as a bather feels cold and chilly, or begins to shiver, it is an indication to discontinue the cold bath. After all kinds of bathing the skin should be well dried and rubbed.

Warm Baths, when ordered in cases of illness, should be regulated by the thermometer, and it is the nurse's duty to take care that the patient's linen is well aired and ready to put on directly the patient has been thoroughly dried and shampooed.

Tepid baths vary from about 85° to 90° Fahr.

Warm 90° to 100° „

Hot 100° to 112° „

In trying the heat of water, poultices, or fomentation, do not trust to your hand, which is hardened by exposure and work, but to some more sensitive part, such as your elbow, or cheek.

Vapour Baths are useful where there is no convenience for a warm bath, or when ordered, may be extemporised in the following manner. Let the patient undress and sit on a cane-bottomed chair, enveloped in two large thick blankets reaching from his neck well down to the floor, let no cold air get in ;

place a bucket two-thirds full of boiling water under the chair ; have two bricks ready heated in the fire, to put into the water when it begins to cool. In a short time you will have the skin streaming with perspiration, rub dry with rough towels, put on the nightclothes and then to bed. These baths may be medicated with mercury or sulphur.

Hot-air or Turkish Baths.—These also act on the skin and cause free perspiration, which must be followed by the operation of shampooing and the cold or tepid douche, the patient gradually cooled down wrapped in a sheet in a well-ventilated room.

The hot-air baths may be given in bed. Place a lighted lamp surrounded by wire-gauze in the bed under a wicker-work cradle placed over the patient, the whole being covered with blankets, leaving an opening for the chimney, and tucking the blankets well round the patient's neck. The patient usually remains in the bath twenty-five minutes, or a shorter time if the impervious covering of a portable Turkish bath be used.

The Shower-bath is a powerful but in some affections an effective remedy. In the absence of the proper apparatus, water may be poured through a colander, held above the patient's head.

The douche is used either warm or cold. If the proper pipes are not provided, pour water from a can upon the affected part, or fix an india-rubber tubing to the tap of a cistern and hold it at a good height above

the patient, who must sit in an empty bath for the water to fall into as it plays upon the limb. The reaction is greater after the use of hot and cold douches alternately, than after the employment of water at only one temperature.

Wet-sheet Packing.—The patient is closely enveloped in a sheet previously dipped in cold or tepid water and well wrung out. He is then wrapped and covered with blankets and kept there for thirty or forty-five minutes in a recumbent position. The duration being timed by the sedative effect produced.

A blanket bath affords an easy means of inducing perspiration. It can be given in the same way as wet-sheet packing, a blanket wrung out in hot water being substituted for the sheet. After the patient has been in the bath half an hour, the surface of the body should be well rubbed with warm towels and the patient made warm in bed.

The Application of Local Remedies.—Poultices are used to relieve pain, in some stages of inflammation, due to tension; they also favour effusion, and thus the over-distended vessels are relieved. Warm applications and poultices are especially useful when suppuration is threatening, they also facilitate the separation of sloughs. It must be remembered that poultices are ordered for a given purpose, and when that purpose is served they must be discontinued; if used for too long a time they induce congestion and sodden the parts.

Poultices must be applied quickly after they are made and as hot as the patient can bear them. Always prepare your patient for the poultice before setting to work to make one. The bad habit of making a poultice and keeping it warm by the fire whilst the patient is being washed and otherwise got ready, must be avoided, for by this means the moisture evaporates, and a hard, dry cake instead of a poultice is formed. Poultices may be made of linseed meal, bread, mustard, yeast, figs, carrots, or charcoal. Most people know how to make a bread poultice, by pouring boiling water on the crumb of bread in a basin, letting it stand for a short time covered with a plate, the water then drained away, and the poultice put into a muslin bag or spread on linen.

Linseed poultices are decidedly best made on tow, as by this means they retain the heat much longer, also fit closer and adapt themselves to any unevenness of surface. To make a linseed poultice properly requires a little instruction and practice. The tow has first to be prepared by teasing it out till it is perfectly fine and free from knotted masses; this can best be done on a plain wooden table or drawer. Place the left hand flat on the table, take a bundle of tow in the right hand, a little of the tow to be pulled out at a time by placing it under the left thumb and palm of hand; the left hand should never leave the table during this operation, which will require repeating two or three times.

Put some hot water into the basin in which the poultice is to be made, just to warm it ; empty this away. Pour in some boiling water and drop in the linseed a handful at a time ; stir vigorously in one direction until a thick paste is formed, turn this on to the tow and spread with a pliable steel spatula. If the poultice is made of a proper consistency, it ought to fall out of the basin without any remaining adherent to the sides. Spread it evenly, leaving the edges of the prepared tow bare, to be turned in over the poultice. Whilst spreading the linseed on the tow, keep dipping the spatula into a jug of boiling water ; do not spread too thickly, because this is wasteful ; also if applied to a joint or some tender spot, the patient will complain of its weight. Some nurses drop a little olive oil on the surface to prevent its sticking, or if ordered to allay great pain, a few drops of laudanum may be sprinkled over the poultice. Be careful to have a fresh poultice ready before removing the old one, and to avoid a chill upon discontinuing the use of poultices, wrap the part in cotton-wool. A poultice should be applied hot, but of course not so hot as to scald the patient's skin. Great care must be taken in applying poultices to patients who are unconscious or paralysed, also the skin of children is thinner and more sensitive than adults.

The quantity of tow, boiling water and linseed must of course vary according to the sized poultice required. A poultice can be made on tow the size of

the palm of the hand, or large enough to form a jacket to surround the back and front of the chest.

Where the discharge from the wound is offensive, a little powdered charcoal introduced into the poultice is a good deodoriser. Mustard and linseed also are often used together.

Mustard poultices are usually spread on brown paper, and mixed with a little flour to render them less pungent; the surface should be covered with a thin fold of muslin or a piece of tissue paper, to prevent it sticking to the patient's skin, and thus avoid much annoyance and unnecessary suffering. The small mustard leaves in tins, sold by chemists, are very useful. Mustard poultices are mixed with vinegar when required to act quickly.

Fomentations.—These are used to relieve pain and hasten suppuration, and are often ordered for acute internal pain in the abdomen, and are very useful when the patient has difficulty in passing water.

Hot water fomentations are made by pouring boiling water on to a fold of coarse flannel and wringing it out in a towel. When placed on the patient, the outside of the flannel should be covered with oil silk or mackintosh to retain the heat. Spongio-piline is very handy and cleanly for fomentations. Turpentine stupes are made by pouring a dessertspoonful of spirits of turpentine on to a hot flannel fomentation. Be careful not to use too much, and see that it soaks into and all over the flannel, or it will be apt to raise

pimples and blisters. Preparations of belladonna, camomile, opium and other drugs are sometimes used for fomentations.

Enemata or Clysters are injections given by the bowel. They are used either for the nourishment of patients unable to swallow, or for medical purposes. Clysters may be either nutritive, aperient, astringent, or sedative. In giving an enema, protect the sheets by placing a towel and piece of waterproof sheeting underneath the patient, who must be made to lie on his left side, with his buttocks close to the edge of the bed. Take care to oil the nosle of the syringe before using ; see that the syringe is filled before the tube is introduced, otherwise air will be forced in before the enema. Gently pass the instrument through the sphincter (or little muscle which surrounds the anus) into the bowel, pressing very gently in a direction at first upwards, then backward and slightly downwards, as the rectum or lower end of the gut runs along the left side of the curve of the sacrum. Nutritive enemata should be made of some thin liquid, for it should be remembered that although the lining membrane of the rectum is capable of absorbing fluids given in small quantities, say two ounces at a time, it is not a digestive organ possessed of the powers of a stomach. Nutritive, astringent and sedative enemata should be given very slowly, and the nosle of the instrument used should be of a small size, so as to avoid stimulating the bowels to act.

Nutritive enemata may be repeated at short intervals; the probability of their being retained and consequent success depends considerably on the skill of the nurse. A pint and a half of warm soap and water, given at a temperature of 100° F., is a very good aperient enema.

Castor oil, opium or turpentine are sometimes ordered to be given by the bowel; they should be mixed with gruel or starch. Salt and water is a good enema for children suffering from thread worms.

Blisters are generally applied spread on leather or adhesive plaister. The time they are allowed to remain on, depends upon the thickness of the patient's skin; about six hours is the usual time. A nurse should always clearly understand from the doctor the exact part of the body to which the blister is to be applied, also its size should be mentioned on the prescription. Sometimes blistering fluid or blistering paper has to be used. If the blister is spread on leather, it will require to be first warmed, and then kept on the spot by strips of adhesive plaister. After the blister has well risen, the inflated cuticle may be pricked in the dependent part, or snipped with a pair of scissors, and the fluid which escapes allowed to run into a pad of cotton wool. Sometimes it is necessary to apply a warm bread or linseed meal poultice. After the blister is removed, if the skin is not sufficiently irritated, the surgeon should tell the nurse with what ointment he wishes the blister

dressed, and whether he wants it to be kept open or healed up. Should it be desired to keep the blister open, the nurse must in this case snip off all the raised skin, leaving a raw surface to be dressed with some irritating application, such as the savine ointment.

Leeches are used for the local abstraction of blood, but should not be applied over a vein. In order to get them to bite, first wash the part thoroughly with soap and water to remove all grease, and rub the skin dry ; they may be then laid on or placed in an inverted glass. Remember that the animal's mouth is situated at its smaller, most tapering, extremity. They are much more likely to bite if kept out of the water for a short time before using, but avoid pulling them about with a warm hand. Sometimes leeches are very obstinate, and will only bite when in water ; this little whim can be indulged by placing them in a narrow phial or test tube of water tail foremost, then invert over the particular spot to which they are required to attach themselves, directly they have taken hold, place a towel round the glass to suck up the water. Do not attempt pulling a leech off, or you may break its teeth in the wound ; it will drop away when sufficiently gorged, and can then be made to vomit by placing it on a plate of salt, or should it be wanted again, put it in a large bowl of water with a piece of turf, if the water is changed every day it will clean itself and recover. Should more blood be required to be drawn away, bleeding from the leech

bite may be encouraged by bathing the part with warm water or applying a poultice. Cold iced water, combined with pressure either digital or applied by means of a pad and bandage, will usually arrest hæmorrhage after a leech bite. Should all the ordinary means fail to stop the bleeding, a surgeon must be sent for.

Wet cupping is the local abstraction of blood by means of small glasses made for the purpose, and a scarificator.

This operation is usually performed by a surgeon.

Dry cupping may be carried out by a nurse after a little instruction.

First sponge the patient's skin with hot water, and rub dry. The air in the cupping glasses must now be exhausted by the aid of a spirit lamp, then place them quickly on to the patient. After a certain quantity of blood has been drawn in this way to the surface, detach the glasses by pressing the skin round the sides with the thumb and so admitting air, they will then drop off without hurting the patient.

Ice to Head.—Cold applications, such as ice, to the head are best applied by bladders or india-rubber bags, tied on to a net which accurately fits the scalp. If this net cannot be obtained quickly, the bladder or waterproof bag containing the ice may be laid on the scalp, and kept in its place by a bandage tied to the bedstead, or tacked to the pillow-case. In severe disease of, or injury to brain, the surgeon will probably

order the head to be shaved. Ice is stored and kept from melting by being wrapped up in flannel, and well drained ; never allow it to be surrounded by water.

Drops for the Eye are best applied by means of a camel's hair brush. Shake the bottle, dip the brush into a little of the lotion poured out into a porringer, pull down the patient's lower lid, ask him to look upwards, then gently slide the drop just over the edge of the lid into the outer corner of the eye. Some people

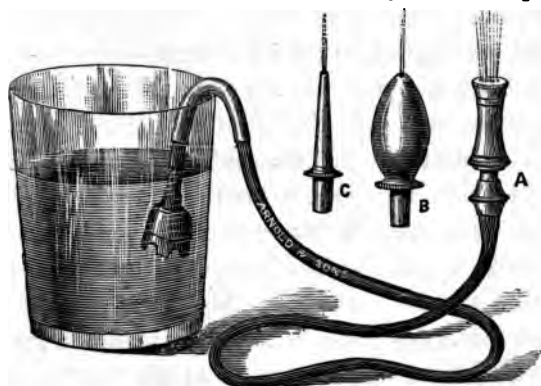


Fig. 1.*

try to introduce drops into the eye out of a quill, but this is a rather difficult and dangerous operation.

In dressing cases of severe ophthalmia, where there is a creamy discharge, the nurse must be careful not to get any of this discharge into her own eyes, as it

* The force of the jet can be regulated to a nicety by raising or lowering the tumbler. The rose douche A may be used for the eye. The nose douche B for applying antiseptic or hæmostatic solutions, and douche C for applications to the ear.

is very contagious. In these cases the eyes may require to be bathed every hour. An ordinary syringe is not permissible, for the force of the jet cannot be regulated. A syphon douche (as suggested by the author, *vide* woodcut, p. 55) is the best instrument for these cases, as the water flows out in a continuous stream.

The towels used must be kept perfectly separate. It is a good plan to dry the eyes with a pellet of cotton wool, which can be burnt after each dressing.

Before commencing to bathe an infant's eyes, protect the bed with a piece of mackintosh sheeting; wrap the child's body including its arms in a blanket, and get an assistant to hold the head on one side.

The application of Strapping requires a little practice. First take care to cut the strapping the long, not the cross way. The patient's skin must be wiped dry. Now warm a strip of strapping by applying its back to a smooth can or jug of hot water. In the case of a wound, apply one end of the strapping on the skin furthest from the operator, make a little traction, place the cut sides of the wound in apposition and draw the plaster over to the other side. When it is required to redress the wound, care must be taken not to separate its edges; remove the strapping from both ends up as far as the wound, then hold the edges together with the finger and thumb whilst taking the plaster away finally. The healthy skin can be easily cleansed by rubbing it with a piece of lint dipped in spirits of turpentine.

CHAPTER V.

The nursing of children—Sore heads, and injuries to scalp—Bed-sores—
Delirium—Infection and disinfection.

Nursing children requires even more care than that of adults, especially in the case of babies who are unable to express their feelings in words.

To nurse children and babies properly, a woman must be naturally fond of little ones, she will then the more readily pick up their language full of expression and meaning. Much can be learned by carefully observing the cries of a young child. A long, loud and passionate cry, followed by a profusion of tears, accompanied with drawing up of the legs, denotes stomach-ache. In diseases affecting the brain or its membranes the child often wakes with a piercing shriek, and the after cries are sharp and shrill. A low cry, sometimes checked before half finished, unaccompanied by tears though the child is evidently distressed, points to affections of the chest. Moans and half-stifled sobs, with an anxious expression of face, are noticeable in serious troubles of the throat and air-passages. There are various symptoms which must be watched for in the early stages of disease. The

first thing which attracts attention is probably that the child is fretful, amused with difficulty, and is unusually drowsy. The baby may be hot or chilly, food is refused, or if the little one takes any nourishment, vomiting succeeds this act.

Now watch carefully the position the child assumes, whether it is most comfortable lying flat or propped up in bed, and on which side it prefers to sleep. Be ready to describe exactly how the child sleeps, whether restless or otherwise, observe the respiratory movements, if hurried and accompanied by harsh sounds.

When the child coughs notice the character of the cough, loud or hacking, and note whether the cough distresses or simply disturbs the child. Carefully watch the expression of face both when awake and asleep, state if pale, flushed, pinched, anxious, or drawn, and observe whether the child is unusually sensitive to light or noise. Look out for rashes, and remember that it is important to know on what part of the face or body they first show themselves, and how soon after commencement of illness.

It is a good plan to give a child a warm bath, at a temperature of 98°, keeping it in not longer than five minutes at the onset of an illness, as the nurse has then an opportunity of examining the whole body, and the bath will help to throw out any rash about to appear. Avoid unnecessary exposure, and wrap the child in a blanket whilst you are wiping its

extremities one at a time with a soft towel. In washing a child, never roll the corner of a towel up into a hard point, or twist a piece of it round a pin, to insert into its ears or nose with the idea of making them clean ; children are often seriously injured in this way. Mothers, remember when choosing a room for a nursery that children, like plants, require plenty of sunlight.

It is not real kindness for a mother to try and nurse her sick child night and day, for she soon gets so exhausted herself that the patient does not have sufficient attention, but is neglected, in fact ; also it is a great delusion for relatives to think that the patient will not take any nourishment except when made or served up by them.

One sees babies and young children daily brought as out-patients to the hospital, whose poor deluded mothers think it would break their little hearts if they left them, but if they do, what is really the result ? In about half an hour the little one is quite happy, being treated in a kind and rational manner. Be kind and gentle but firm in the nursing and training of a child.

It is marvellous what accurate judges of character children are ; they soon discover whether they can take liberties or not with their nurse, and know who will be obeyed and with whom they dare fight for power. Never tell a child to do anything without you are perfectly sure you can make him do it, should

he resist, and above all do not make promises to children which you are unable to fulfil. If you punish a child, do it in such a way that the child can feel you are correcting that which is wrong in him, and not satisfying your own angry or impatient feelings. Do not make idle threats to children which you do not in the least mean to carry out. Never frighten a child by shutting it up in a dark room ; and a moment's reflection must convince any person of the extreme folly of speaking of bogies and ghosts.

Do not mention the doctor in any way as a punishment, holding him up as a bugbear to terrify a child ; he will have a much better chance of finding out what is the matter and restoring his patient to health, if the child is trustful and looks forward, as they should be taught to, with pleasure to the doctor's visit.

There are many popular customs which mothers should avoid, such as—patting a child hard upon its back when coughing ; teaching it to suck its own thumbs ; always accustoming it to be rocked to sleep ; making startling noises with the idea of amusing it ; all these and many other like practices do more harm than good. Also guard against that very injurious practice of covering a baby's face when asleep.

It is a mistake to suppose that every time a child cries it is hungry ; it may have a pin running into it, or have pain in its limbs from being cramped up in one position. When feeding a child, do not blow on

the sop to cool it, the breath of expired air being impure will necessarily make the food injurious. In very early life an infant can be taught a habit, especially cleanliness, by a slight amount of trouble and regular attention. A good nurse is always alive to the well-known little moan of discomfort. The digestive organs are wonderful in their mechanical regularity, to which they should be habituated from birth. In the case of babies, should there be a tendency to costiveness, this is often remedied simply by passing up and down in the rectum a small thin suppository of soap, previously dipped into warm water or oil. When children get to be a few years old they are sometimes whipped and ill-treated for not being cleanly in their habits. It is always best in these cases for mothers and nurses to consult a medical man ; it may be as it often happens that they are the subjects of disease or malformation.

Do not be anxious to make a child stand or walk too early, it does not follow because one child can walk at a certain age that another should. If a child sleeps badly, grinds its teeth, rubs its nose, or otherwise shows symptoms of irritation, and has a voracious appetite, be on the look-out for worms.

Worms.—The most common variety are the small thread worms, but should any other kind be observed, save one for the doctor's inspection.

Always in these cases consult a medical man, as children with these troubles are usually delicate.

Never buy worm cakes, soothing syrups and such-like *injurious* concoctions. If a child has frequent protrusion of the bowel, a doctor should be consulted, as it may be due to some constitutional disease or stone in the bladder, although in some instances it is occasioned by ignorant women making children sit upon commodes, and inducing them to strain until something has been accomplished.

Prolapse of the Bowel.—The temporary treatment of prolapse of the bowel is to make the patient lie down, raise the buttocks, wash with tepid water, then oil the fingers, and firmly but gently press the bowel into position.

Convulsions in young children may be due to teething, worms, indigestion, or other causes. You cannot do much harm by putting the child into a warm bath, always taking care that the little thing does not injure itself in its struggles.

Should it have a series or more than one convulsion, at once seek further advice.

The Diet of Children.—This is an important subject, and there not being sufficient attention paid to it is the cause of a great deal of illness. That common disease called rickets, in which the bones get softened and out of shape, is primarily due to prolonged lactation and subsequent bad feeding. Unless a woman for some good reason is forbidden by her medical adviser, she should always suckle her own child, and not let any unwillingness to face the

necessary self-denial tempt her to forego this sacred duty. The cutting of teeth is nature's hint that it is time to wean a child ; this takes place between the age of seven and eight months,

Even then be it remembered that milk ought to be the infant's staple diet. Nature has ordained that milk shall contain all the constituents for the proper nourishment of a baby, but this is often forgotten or ignored by the ignorant. A child can well be brought up on cow's or goat's milk, diluted with water and sweetened with sugar.

If these cannot be procured, a child will thrive upon condensed milk, diluted in accordance with the age of the child. A little lime-water added to this is often sufficient to correct a tendency to diarrhoea.

A young baby should be fed every two hours, and twice during the night. The more natural sleep it gets the better.

The following list of rules are printed and given away to mothers at the out-patient department of The Children's Hospital :—

HOW TO BRING UP BABIES.

I. Keep them warm. Let the clothing be warm, but not tight. Give them plenty of fresh air. Send them out whenever the weather is fine. Open the windows at least twice every day. Wash the child all over, with warm water, daily.

Food—Under Seven Months.

2. If the mother has plenty of milk, let her give the child nothing else until it is seven months old. Three out of four children brought up by hand die. If the mother has only a little milk, let the child have it, as well as food of the sort stated in Rule 3. Begin to wean the baby when it is seven months old.

3. If the child must be brought up by hand, it should be fed with warm milk and water out of a bottle. It should have, at first, equal parts of milk and water. When it is about a month old, two parts of milk should be put to one of water. If the milk should disagree, it may be boiled before it is put into the bottle. Each bottleful should have a little sugar put into it—a small lump, or half a teaspoonful. Give the baby no other kind of food whatever. While the baby is under a month old, do not give more than a sixth of a pint of milk and water for one meal. The bottle should draw easily. It should be rinsed out with water every time it is used. It is a good plan to keep the tube and cork in clean water. If the bottle is not quite clean, the milk will turn sour, and the child will be made ill.

4. Whether you suckle the child or bring it up by hand, feed it at regular times, every two, three, or four hours, according to its age.

Food—Over Seven Months.

5. When it has reached the age of seven months, the child should have one or two meals a day of milk, thickened with Robb's biscuits, Hard's farinaceous food, Liebig's food, baked flour, or good well-baked bread. This should be given out of a bottle, and should be thin enough to pass through a sieve or strainer. The child should have, besides this, plenty of warm milk, slightly sweetened. When the child is eight or nine months old it should be completely weaned. At ten months it should have a little thin broth or beef-tea every day. At a year and a half give it a little meat every day, cut up very fine, or pounded.

Sore Heads and Injuries to the Scalp.—There is often great repugnance shown by some mothers to have their children's hair cut; in some cases it is almost impossible to get the head well without it, and it must be remembered the hair will grow again. In sore heads it is useless to apply remedies on the top of a crust or scab. These can be softened, and subsequently removed by poulticing and bathing the part in warm oatmeal and water, gruel, or soft soap. The remedies should be applied to the raw surface, the sore afterwards covered up and the air excluded; in these cases the hair should be cut close with a pair of scissors. The remedies are most effectual when rubbed in; if ointment, for instance, is spread on a piece

of lint and so applied, owing to the short erect ends of hair, the treatment is not brought in contact with the disease. In long illnesses the hair should be kept short, for, even with the greatest care and cleanliness, nits, pediculi and vermin will sometimes make their appearance. To keep the hair clean, wash it with borax and camphor water. Shaving the scalp round the wound with a razor is the most effectual method of dealing with an injury in this region. The part should be well cleansed, and washed with cold water, and pressure applied if there is much bleeding. Of course, to get healing by first intentions, the edges must be brought accurately into apposition. Erysipelas often follows injuries to the scalp, so great care is imperative in the after treatment.

Bed-sores.—Prevention is easier than cure. The treatment of bed-sores is the doctor's business. The earlier they are taken the more chance of ultimate recovery; therefore it is a nurse's duty directly she discovers a breach of surface on the skin, or even the least sign of redness on dependent parts, at once to report it. The prevention of bed-sores should be a nurse's first and constant care. Bed-sores are always liable to occur on dependent parts exposed to a great deal of pressure, in long-continued or exhaustive illnesses; especially are they liable to occur in patients suffering from severe fever, where there is great prostration, or in cases of paralysis, also in surgical cases which necessitate a patient lying in one position.

Bed-sores may occur on any part of the body ; the buttocks, back, and heels, being most liable. To prevent the formation of bed-sores the nurse must take the greatest possible care in making her patient's bed. By regularly turning the mattresses, she may prevent her patient from sinking into a hole ; the sheet covering the mattress must be kept perfectly smooth, free from wrinkles and bed crumbs.

Cleanliness is all-important ; the bedding must be kept clean and dry ; draw-sheets changed directly they are the least soiled ; the patient, especially his back, must be washed regularly with soap and water. The skin must be further hardened by dabbing it with rectified or ordinary spirit and water, or by some astringent preparation containing tannin or alum. The nurse must frequently pull down and adjust her patient's nightdress if he perspires freely or is at all restless ; she must not allow him always to lie in the same position, but when it is possible turn him on to his side occasionally, or even, if necessary, face downwards, her object being to avoid continuous pressure on one spot. In the case of a bed-ridden person it is a good plan for the nurse to feed her patient sometimes from one side of the bed, sometimes from the other ; by this means, however helpless, he will involuntarily turn towards the food and change slightly his position. If your patient has no control over his evacuations, the liability to bed-sores is increased, but this ought only to stimulate the nurse

to increased vigilance ; the skin will require washing three times a day, and after it is thoroughly dried, it might be powdered with starch and oxide of zinc. If the skin has unfortunately broken, as it sometimes happens in cases of angular curvature of the spine, cut a hole as large as the wound, in a piece of amadou plaster, and stick that on ; some nurses advise a square of ordinary diachylon plaster, but the difficulty is to avoid it getting into wrinkles.

A circular pillow, with a hole in the centre, can be made with some soft linen or lint stuffed with tow or cotton-wool. Air cushions and water mattresses are of great value, but care must be taken to have these frequently washed, an important precaution often forgotten.

Bed-sores are particularly liable to occur in feeble persons whose circulation is languid, and are due to unrelieved steady continuous pressure for any length of time on one spot. The patient usually first complains of a prickling irritation and soreness ; redness and swelling will be found upon inspection. If taken in time this stage of redness need never be passed, but if neglected, it will run on to a breach of skin surface, the patient complaining of a burning sensation, or if partially unconscious, he will probably not complain at all.

This breach may extend to a slough undermining the skin, forming a quaggy sore involving the muscles and all the tissues down to the bone. A good nurse

will never wait for a patient to complain of soreness ; she would always be on the alert to prevent such a possibility.

Delirium varies in intensity, from mere light-headedness to raving madness. Its causes are numerous. Delirium may be due to excess of alcohol ; anæmia of the brain, as in the advanced stages of consumption ; it may occur in the height of some severe fever, and it is not an uncommon accompaniment of severe injuries.

A nurse should never laugh or make jokes at the expense of poor creatures who are deprived temporarily by accident or disease of their senses. This thoughtlessness alone stamps a woman as being out of place in a sick-room. It is a nurse's duty religiously to keep secret any private concerns of her patient which he or she may unconsciously allude to whilst in a state of delirium. A breach of confidence of this kind is as contemptible as it is unpardonable.

Never argue with, answer, or contradict a delirious patient. Be firm, but gentle, in your manner, and on no account let the patient see that you are afraid of him. In this way, by judicious management you may often prevent the necessity of restraint, which should be always under a medical man's supervision, and a *dernier ressort*, avoided if possible.

Of course all knives or things which may be converted into weapons of injury, either to themselves or others, should be placed entirely out of the patient's reach.

In these, as well as in those cases of apparent insensibility, be careful to avoid saying anything about the patient within hearing. When it is necessary to talk or answer the patient's questions, always speak the truth.

If you should be compelled to use restraint, to keep the patient in bed, take two folded sheets, and tie one loosely to the sides of the bedstead over the patient's chest, and the other over his legs ; or a better plan still is to tie a big net loosely over the patient.

A strait-jacket is merely a strong canvas shirt, fastened by tapes at the back, and made with long blind sleeves.

After the jacket is on, the patient is laid down and his hands tied to opposite sides of the bed by means of long pieces of tape attached to the sleeves.

If the jacket is used, or anklets are resorted to, the patient must be relieved from them as soon as this can be done with safety. The greatest vigilance is required in nursing delirious patients ; they must be constantly and carefully watched. The bedroom must be darkened and kept cool and quiet. See that your patient takes the nourishment and medicines ordered. If he refuses, or is unable to drink, he must be fed through an india-rubber tube passed in at the nose. It is upon the nurse's conscientious watchfulness and care that the patient's life depends.

Infection and Disinfection.—In order to prevent the spread of contagious diseases, pay strict attention

to cleanliness, ventilation, and isolation. Always surround the sick with plenty of fresh air; it is the poisoned atmosphere which is such a ready source of danger.

Keep a good fire burning day and night in the sick-room. Use disinfectant solutions to all utensils and slop-pails, also flush the drains, sinks and closets, with disinfectants.

The patient's linen must be rinsed out in Condyl's fluid, carbolic, or chloride of lime and water, and where it is possible hung out in the open air, or boiled in soda, before being sent to the wash. Blankets and woollen articles can be disinfected by dry heat in an oven raised to a temperature of not less than 200°, if a disinfecting establishment is not available. After this they may be further purified by exposure in the open air to sunlight.

A woman must not undertake to nurse an infectious case unless she is in a good state of health, and she should perform those necessary administrations, such as feeding and washing the patient, after she herself has partaken of a meal.¹

Visitors should likewise take food before entering the infectious chamber. Every room that has been used by an infected person should be disinfected before it is reoccupied or the furniture moved.

To disinfect a room, first close the doors and windows, stop up the chimney, keyholes, and

¹ *Vide* Management of nurse's own health, Chap. II.

registers, fill all the crevices with tow, and paste up the cracks, then fumigate with either chlorine, sulphurous, or nitrous acid gas.

If chlorine is chosen, this gas can be disengaged by a mixture of one part of common salt, one part of black oxide of manganese, and two parts of oil of vitriol.

For a small room, well mix eight ounces of black oxide of manganese and eight ounces of common salt; distribute this on plates or saucers about the room, and pour on a solution consisting of a pint and a half of sulphuric acid and a pint of water. Chlorine may also be generated by pouring strong vinegar or acetic acid on chloride of lime. Get out of the room as quickly as possible, and lock the door for twelve hours. Do this over-night, and in the morning throw open doors and windows, and air the room for a few days.

If sulphurous acid is used, it must be remembered that the fumes of this gas will bleach coloured articles exposed to its influence. To obtain sulphurous acid gas, burn sulphur; some sulphur powder may be placed on tiles raised on bricks, put about the room and then lighted.

If you wish to fumigate with nitrous acid gas, place several cups in basins containing hot water in different parts of the room, and inside the cups put two ounces of nitrate of potash (saltpetre) and one ounce of sulphuric acid.

After the disinfection of the room, whilst the room is being aired the furniture can be washed and scrubbed in a solution of chloride of lime. Before the room is again occupied it must be repapered, painted or coloured, and the ceiling whitewashed.

CHAPTER VI.

Undressing and washing accident cases—Padding splints—Signs and management of fractures—Different kinds and treatment of hæmorrhage.

GREAT care is absolutely necessary in undressing and washing a case of accident, especially where fracture of bone is evident or suspected. By carelessly handling a simple fracture of leg, the fractured ends may prick through the skin, or into a blood-vessel ; in this way the simple injury is made compound or complicated, which is of course most serious. Before treating an accident it is necessary to ascertain its nature, therefore always expose and examine the injury. Be careful how you remove the clothing. The sound arm must first be removed from the coat sleeve ; and if a man's leg is broken it is dangerous to try and pull his trousers off, it is best to slit up the trouser of the injured leg at the outside seam. Again, do not try to drag off tight-fitting boots with elastic sides, you had far better cut them away. Do not attempt to drag out articles of clothing that have been driven into a wound, this is to be left until the doctor comes, for you may start severe bleeding ;

merely cut away the clothing round the injury with a pair of scissors.

Padding Splints.—Splints are used in the treatment of fractures, deformities, injuries and diseases of joints. The materials chiefly used in making splints are zinc, iron, wood, gutta-percha, tin, cardboard, or plaster of Paris.

The padding of splints is part of a nurse's duty, and may be done either with wool, wadding, tow, or flannel. To pad we will say a wooden splint evenly and firmly requires care and practice. Cut a piece of linen as broad again as the splint, take one or two layers of wadding or thick flannel, place it on the linen, turn in about an inch all round and sew it down, then place the pad on one side of the splint, keep it on the splint by means of strong thread laced across the back. Temporary splints may be made either of wood, cardboard, or folded newspapers cut about the same length and breadth as the injured limb, and one should be placed on either side. Extemporised splints can also be formed of umbrellas, walking sticks, or the straw cases used for packing wine bottles. The inner splint in cases of fractured forearm should extend from the bend of the elbow to a little beyond the fingers, and the limb placed in a sling with the thumb directed upwards, and the hand raised to a higher level than the elbow. It is especially dangerous to move a person with fractured thigh bone. Before attempting it, place a long splint

on the limb reaching from the armpit to below the foot on the outer side, and a shorter one on the inside. Tie the two legs together. In raising these cases from the ground, it will require three people for a heavy man; the hands should be firmly locked under the patient's buttocks and shoulders, while the third person steadies the extremities.

Signs and Management of Fractures.—Fractures or broken bones are caused by violence. In writing on this subject I will quote from the late Surgeon-Major Shepherd's little work, written for the St. John's Ambulance Association.

"The symptoms of fracture are :—

"1. Alteration in shape and general appearance.

"2. Unusual mobility at seat of fracture.

"3. Crepitus or crackling on placing one hand over the broken part and creating movement with the other.

"4. Shortening of limb usually.

"5. Some inequality felt on running the fingers along the surface of the injured bone. Fractures are distinguished from dislocation as follows :

<i>" Fractures.</i>	<i>Dislocations.</i>
Crepitus.	No crepitus.
Unnatural mobility.	More or less fixed.
Easily replaced.	Replaced with difficulty.
Limb often shortened.	Limb may be shortened or lengthened.
Shaft or body of the bone.	Seat of injury at joint."

There is no urgency about treating a fracture, or a

dislocation, except the natural desire to try as soon as possible to relieve a fellow-creature of pain. Should it be imperative, however, to move a person with a broken bone, in the absence of a surgeon, it is absolutely necessary to secure the safety of the limb by putting it in splints before removal. The temporary treatment of fracture is gently to reduce the broken ends of bone to their natural position, and to keep them so by means of splints and bandages. A stretcher is the only safe means of conveyance for cases of fracture, and the bearers should always walk *out* of step. If there is no stretcher to be had, a shutter will do, or a four-wheeled spring van. Should the latter be chosen, small wisps of straw done up in bundles about a quarter the size of an ordinary truss should be placed all over the bottom of the van; this helps to prevent jarring.

The different Kinds and Treatment of Hæmorrhage.—To understand this subject, it is necessary for the nurse first to be able readily to distinguish between the three kinds of hæmorrhage—arterial, venous, and capillary. The capillaries are those small blood-vessels in which the arteries end, and the veins commence. Bleeding from capillaries is easily recognised by a continuous oozing of blood, such as every one is familiar with in an ordinary superficial cut of the finger.

The arteries are those vessels which convey the blood from the heart to all parts of the body; veins

carry the blood back to the heart. Arteries have thicker and more elastic coats than veins. In the inside of veins are valves or little trap-doors, to prevent the blood going in the wrong direction ; there are no valves in the arteries, except just where they leave the heart.

Blood flows more quickly in the arteries than it does in the veins. Arteries carry red blood, whereas the blood in the veins is of a purplish hue. There are two sets of veins, the superficial and the deep-set ; these latter accompany the arteries, one on either side. Arteries are placed deep down on the inner protected side of the limbs. In arterial hæmorrhage the blood flows in jets or spurts with great force, and is of a red colour. Venous hæmorrhage proceeds in a continuous stream, the blood being of a dark purple hue, welling up from both sides of the wound.

Bleeding is caused either by laceration, rupture, or disease of the coats of blood-vessels. Bleeding is spoken of as primary, recurrent, or secondary.

By secondary hæmorrhage is meant hæmorrhage the result of suppuration, or the non-occlusion of a vessel following the application of a ligature. Cold applications, pressure, and position are the means most generally employed in the treatment of hæmorrhage. In cases of bleeding, the first thing to be done is to expose and examine the wound, wash it with cold water, and elevate the bleeding part. Arterial bleeding can always be arrested, provided the

severed ends of the vessel can be reached and pressed between the finger and thumb. Slight pressure on the vessel against some point of resistance, such as a bone, will readily stop the blood-flow. The bleeding is not so much influenced by the intensity of the pressure, as by the accuracy with which that pressure is applied exactly over the course of the vessel. A study of the accompanying diagrams will help a nurse to find out where some of the larger arteries of the extremities are situated, and the places where pressure may be best exercised. In case of a wound in the armpit, the subclavian artery may be controlled by pressing the vessel against the first rib. The pressure must be applied just above the collar-bone, and in a direction downwards, inwards and backwards.

If a piece of *elastic tubing* can be obtained, bleeding can be arrested when it occurs on the lower part of a limb without any anatomical knowledge.

Merely stretch the tubing out, bind it tightly round the limb above the injury and tie in a knot. Professor Esmarch has invented an elastic tube, having a hook at each end. It is bound on whilst on the stretch round and round a limb and finished off by fastening the two hooks together.

It would often be the means of saving life if a piece of tubing of this sort were kept at the docks, at all railway stations, and in large workshops, where accidents are of frequent occurrence. The brachial artery runs well protected along the inner side of the

arm, extending from the anterior fold of the axilla to the middle of the front of elbow joint ; a tourniquet may be applied in any part of its course, about the middle is the easiest (Fig. 2). Just below the middle of the elbow the brachial artery divides into two

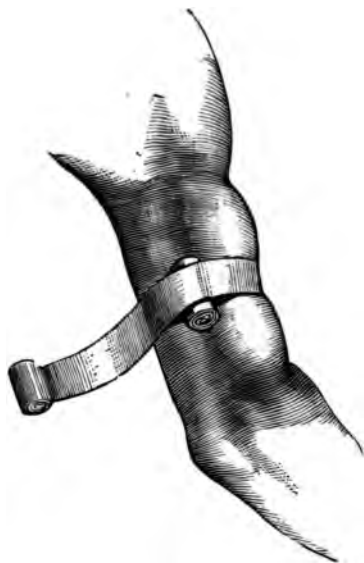


Fig. 2.

branches, the radial and ulnar, which respectively run down the forearm towards the outer and inner side of flexor surface of wrist. Although covered with muscles the greater part of their course, about an inch above the front of the wrist joint they are quite superficial, and it is here that they can be easily controlled.

In bleeding from the palm of hand, bind the fingers over a large hard compress placed in the palm, and put a tourniquet improvised of pads and bandage on the radial and ulnar arteries.

The *femoral* artery can be found exactly in the



Fig. 3.

middle of the fold of groin. It takes a course along the upper two-thirds of thigh in a line with the inner side of knee-cap. The blood-flow through this artery can be controlled at the fold of the groin (Fig. 3), or in

any part of its course along the upper and inner third of thigh (*vide* Fig. 4).

The *popliteal* artery is situated in the middle of the popliteal space at the back of knee-joint. To control it, place a small folded-up roller bandage over the



Fig. 4.

vessel in this place, flex the leg upon the thigh, keep it flexed by the application of a tight bandage.

The arteries about the ankle-joint are situated behind the internal bone of ankle, and behind the external, also in the front of ankle-joint exactly in the middle line (Fig. 5), and it is in these places where a

carefully adjusted tourniquet will arrest the supply of blood to the foot. It must always be borne in mind that before a nurse attempts to stop arterial bleeding by applying a pad and bandage on the heart side of wound, she must satisfy herself that the pressure is about to be applied in the right place by her first feeling the pulsation in the artery with her finger.

If only very small vessels be wounded, plug the

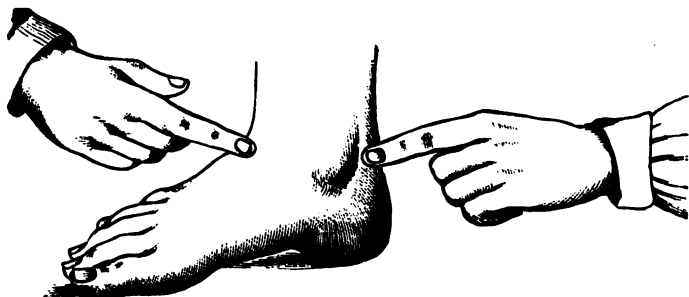


Fig. 5.

wound with thin pieces of lint, and bandage tightly. Should the bleeding continue, and it is known by the symptoms already enumerated that it is a case of arterial hæmorrhage with which you have to deal, apply pressure to the main artery on the heart side of wound with the fingers, or extemporise a tourniquet by putting on a pad and bandage.

A surgeon, when called in, has various other means at his disposal, such as the actual cautery, caustics, styptics, torsion, ligature and acupressure.

Venous Hæmorrhage.—In bleeding from varicose veins the direction of the flow of blood in these vessels towards the heart is to be remembered in the treatment. Elevate the limb and apply pressure with a pad and bandage on both sides of the wound, and remove any restriction to the circulation on the heart side, such as garters or tight clothing. There are two things that should be borne in mind by people who suffer from swollen veins ; the limbs should be raised and kept in the horizontal position as often as practicable ; also the first thing in getting out of bed in the morning, before the legs have time to swell, get a friend to apply a roller bandage smoothly and evenly, beginning at the lowest extremity and working upwards, and let the bandage be put on firmly at first.

Internal Hæmorrhage may be treated by placing the patient in an easy semi-recumbent position, perfectly at rest ; apply cold applications as near as possible to the part affected. Sucking ice is useful in bleeding from the mouth, stomach, or air-passages ; the patient should be kept quiet and not allowed to talk.

Bleeding may be recognised as coming from the *lungs*, when it is coughed up and of a bright red colour.

In hæmorrhage from the *stomach*, dark-coloured blood is vomited up without effort, and it is sometimes mixed with particles of food.

A little bleeding from the *nose* often relieves head-

ache, and does good, but should it become very severe a surgeon must be called in. It can often be stopped by applying a sponge to the nose and forehead, wrung out in cold or iced water, or a little tannin powder used as snuff; alum and water may be squirted up the nose. To blow the nose will only increase the trouble.

CHAPTER VII.

Bandaging—Roller and triangular bandages—The clove hitch, and reef knot.

Bandages are used as a means of applying pressure, for support, to fix splints and dressings, to ensure rest, and to allay muscular action.

They are usually made of unbleached coarse linen, webbing, or flannel. If calico or linen be used, it should be first washed, to get rid of the glaze and stiffening with which it is got up for sale, and the selvage removed; the bandage should be torn off from one whole piece, to avoid cross ridges from the joining of short lengths. Roller and triangular bandages are the ones in most common use; their application is best learnt by a practical lesson. Roller bandages must be cut in certain convenient sizes, according to the part of the body for which they are required.

For the arm or head of an adult the bandage should be made about two inches wide and six yards long; a broader and longer bandage will be necessary for the chest or leg. Before commencing, see that the bandage is firmly and evenly rolled, for unless this is

done it is impossible to apply it to a limb neatly. The operator should stand in front of his patient, grasp the roll in one hand, and taking the loose end in the other, apply it to the limb so that the outer surface may be against the skin. After fixing your bandage with a couple of turns round the limb, begin from below and work upwards, bandaging from within outwards.

Be careful that the pressure is uniformly and evenly applied; leave no gaps, and avoid wrinkles.

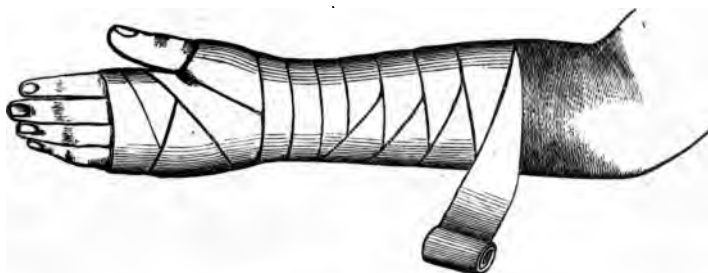


Fig. 6.

A common fault with beginners is either to put on the bandage too tightly, and so cause constriction and hindrance to the circulation of the blood, or too loosely, which renders the bandage practically useless; a happy medium must be struck between these extremes by great care and practice.

Where the limb is of uniform thickness use the simple spiral, when it thickens reverse the spiral, and at joints use the figure of eight. The spiral consists

in covering a limb by a series of spiral turns, each turn overlapping the one below by exactly one-third of its width. A reverse or turn in the bandage is made when the limb thickens so as better to accommodate the shape; these turns must be made from above downwards, and on the outer fleshy side of a limb, never over a prominence of bone. Care must be taken

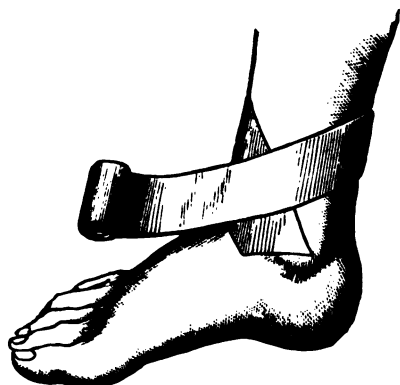


Fig. 7.

not to unroll more bandage than is actually required for the performance of this turn; however tightly the bandage may have been drawn before, at the moment of making the turn it should be held quite loosely; the applied part of the bandage may be prevented from slipping by pressure with the fingers of the manipulator's other hand. *The figure-of-eight* bandage is used generally for joints, and can be applied in the

following way :—for covering in the knee-joint, supposing the bandage has not been brought up the leg, it



Fig. 8.

should be first fixed by a couple of turns just below the knee-cap (see Fig. 9), now carry the roller behind the

ham, bringing it up on the inner side once round the thigh, and back again on the outer side, making it overlap the former turn neatly. The next turn of the roller round the leg must be made higher than the previous one, that each turn may fix and cover the joint properly, and so on until the original turn round the

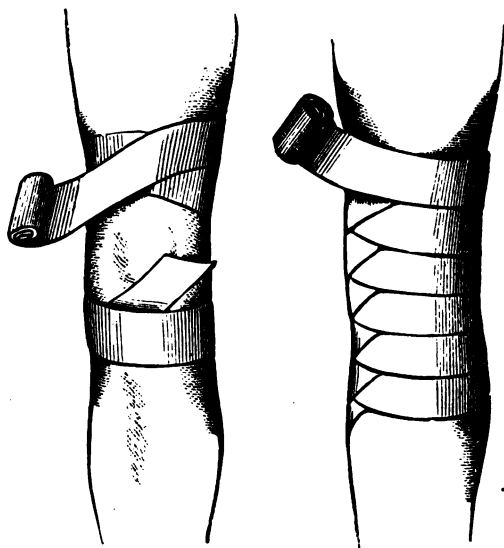


Fig. 9.

thigh is completely hidden by the folds of the figure of eight turns applied over it.

The Capitate Bandage is an exceedingly useful one for keeping dressings on the head, or making pressure upon extensive scalp wounds. Make a double-headed

roller by cutting a bandage two inches broad and eight yards long, and rolling it up from each end so that the two rolls meet in the middle.

In putting it on make your patient sit down, and stand behind him in this case; first take the two heads of the roller, one in the left hand, and the



Fig. 10.

other in the right; apply the intermediate portion of the bandage upon the patient's forehead, as far as the brow, bring the rolls round the side of the head low on to the occiput. The bandage in the left hand is now to cross the other and be transferred to the right. The left is carried along the middle line at the top of

the head, and the right made to continue its horizontal course around the head to the forehead, when it again crosses the other bandage and passes round to the occiput. The vertical bandage is now folded backwards and forwards a little to one side of the middle line, the horizontal bandage keeping it in position. In this way the whole of the scalp can be neatly



Fig. 11.

covered in if care is taken always to cross the bandages near the middle line, and always make the posterior fold well down over the occiput, so as to avoid any unevenness over the most prominent part of the back of the cranium, where pressure is liable to be exercised on the pillow.

A Spica Bandage is the name given to a bandage when applied to the groin.

Let the patient stand with the operator in front of him, fix the roller with a couple of turns round the upper part of thigh from within outwards, then pass



Fig. 12.

the bandage round the pelvis (over any pad or dressing it may be desirable to keep on the groin) and back by the pubes, crossing the former fold at the groin and thus completing the figure of eight.

A better plan of applying this bandage has been suggested to me by Mr. W. T. Whitmore :—"Give the

patient the free end of the bandage to hold against the abdomen, pass the roller between the legs, carrying it backwards behind the affected side, bringing it forwards round the opposite hip, then take a turn round the body, continuing it downwards between the legs. The bandage may be finished off by tying or pinning the end held by the patient."



Fig. 13.

To apply a double spica, begin in the same way as in fixing a single spica; the bandage is carried over say the right groin, around the pelvis, then over the left groin, forming a loop round the left thigh; cross the abdomen to the right side, encircle the waist, now

again over right groin ; a series of these turns will effectually cover in both groins.

A T-shaped Bandage is used for keeping dressings on the perineum.

That part of the bandage corresponding to the upper line of the capital letter T can be tied round



Fig. 14.

the waist, and the perpendicular part pulled round between the legs, and fixed on to the waist bandage.

Finger Bandage.—Cut a bandage three-quarters of an inch wide and two yards long, then roll it up firmly.

Fix it with a couple of turns round the wrist, leaving out a loose end ; now take it across the back

of the hand, spirally up to the tip of the finger, back down the finger, across the back of hand, and fix with loose end at wrist (see Figs. 13 and 14).

A Bandage to support the Breasts is sometimes required for women with large heavy pendent bosoms, during lactation, and in cases of abscess or disease of these glands.

Fix a broad roller bandage with a couple of turns round the waist from left to right, take the bandage under the left breast (which must be slightly raised) and over the right shoulder, then fix with a half turn round the waist ; now across the back to the left shoulder, across the chest and under the right breast and round the back to the left side ; next turn again under left breast and half round the chest ; so on alternately, the folds being applied on the left from below upwards, and on the right from above downwards, crossing alternately on the front and back of chest.

A Many-tailed Bandage is used for limbs and joints which require constant dressing, but which it is desirable should not be moved. Cut an ordinary roller bandage across into small strips of equal length, wide enough to go once and a half round the limb ; attach them at right angles to a central piece the length of the limb. The central portion is to be gently insinuated under and applied to the back of limb, and the transverse pieces folded over it in regular order beginning from below.

In stitching the transverse strips to the central

portion, the upper strip should be attached first and the next made to overlap it slightly, and so on to the end ; thus when folded over the limb, from below upwards, each turn will overlap slightly the one below it and give additional support.

The Triangular Bandage answers every purpose for temporarily fixing dressings and splints, or for support. It can be easily made by cutting a large pocket-handkerchief diagonally in two, but the most convenient sized ones measure four feet along the lower border, and two feet ten inches on each side.

The following directions for its employment are taken with few alterations from Professor Esmarch's Manual, "The First Dressing on the Battle Field." The numbers refer to those on Esmarch's Illustrated Bandage.

" This bandage is a triangular piece of linen or calico made by taking a piece of either of these materials, about 40 inches square, and cutting it diagonally, that is to say, from one corner to the other into two halves. Of the three borders of the outspread cloth the longer is called the lower ; the others the side borders. Of the three corners the upper one opposite to the lower border may be named the point, the two others the ends.

" When not in use it should be folded perpendicularly down the centre, placing the two ends together. Then the ends and the point should be brought to the centre of the lower border or base of the perpendicular

line, thus forming a square. This should be folded in half and again twice until it assumes the form of a small packet $6\frac{1}{4}$ by $3\frac{1}{4}$ inches.

“For use it may be folded broad or narrow, according to circumstances. Having spread out the bandage, commence by carrying the point over to the lower border, and still working from the direction of the point, when it is required broad, fold it twice and when narrow three times.

“The bandage is fastened either by pinning the ends together or by knotting them. The sailor’s knot should be always used in preference to the woman’s knot, as being less likely to slip.

“Before applying bandages in the following cases all blood and dirt should be removed from about the wound, either by wiping with some soft material or by sponging with cold water, should it be available. The hair should also be cut away from a wound if time and circumstances will permit. Next place a piece of lint double over the wound and bandage as hereinafter described.

“*Wound of the Scalp.*—Place the middle of the bandage on the head, so that the lower border lies crossways before the forehead, the point hanging downwards over the nape of the neck. Carry the two ends backwards above the ears, cross at the back of the head, bring forward, and tie on the forehead. Then stretch the point downwards and turn it up over the back of the head and fasten it on the top with a pin. (9-21.)

“ Wound on Forehead, Side, or Back of Head.—Fold the bandage narrow, lay its centre over the wound, and, carrying the ends backwards, tie at the opposite side of the head ; or, if the bandage be long enough, the ends may be crossed at the opposite side, carried forward, and knotted in front. (22.)

“ Wound of the Jaw or Side of Face.—Fold the bandage narrow, place the centre under the chin, carry the ends upwards one at each side, and tie on the top of the head. (10.)

“ Wound of the Eyes or Front of Face.—Apply the bandage in a similar manner as for the last. (8.)

“ Wound of the Chest.—Place the middle of the bandage on the chest with the point over the shoulder, carry the two ends round the chest, and knot at the opposite side. Next draw the point over the shoulder downwards and tie or piece it to one of the ends. (19 and 20.)

“ Wound of Shoulder.—Lay the centre of the bandage on the top of the arm with the point up the side of the neck and the lower border lying on the middle of the upper arm. Carry the two ends round the arm, and, crossing them on its inner side, bring them back and tie on the outside. Take a second bandage, fold it, and make an arm sling of it ; then draw the point of the shoulder bandage under the sling, fold it back on itself and fasten with a pin on the top of the arm. (5-24-32.)

“ Wound of the Hip.—Fold one bandage narrow and

tie it round the body as a waist belt. Lay the centre of a second bandage on the wound with the point upwards, pass the ends round the upper part of thigh, cross and carry to the front, and knot them together. Next pass the point under the waistbelt and fasten it with a pin. (31.)

“ Wound of the Upper Arm.—Place the centre of a broad folded bandage on the front of the limb, carry the ends round to the opposite side, cross them, bring them back, and knot them together. (18.) Next take a second broad folded bandage, throw one end over the shoulder on the sound side, carry it round the neck so as to be visible at the opposite side ; then bend the arm carefully and carry the wrist across the middle of the bandage hanging down in front of the chest. This done, take the lower end over the shoulder on the wounded side and knot the two ends together at the nape of the neck. This is called the smaller arm sling. (24.)

“ Wound of the Fore Arm.—Dress and bandage the wound as in the last case. (26.) Then take a second bandage, throw one end over the shoulder at the sound side and carry it round the back of the neck so as to be visible at the opposite side, where it is to be held fast, place the point behind the elbow of the injured arm and draw down the end in front of the patient. Next bend the arm carefully and place it across the chest on the middle of the cloth. Then take the lower end upwards over the shoulder on the

wounded side and knot to the other end at the nape of the neck. This done, draw the point forward round the elbow and fasten it with a pin. This is called the larger arm sling. (4.)

“ Wounds of the Hand.—Take a bandage, spread it out, and lay the wrist on the lower border with the fingers towards the point. Next turn the point over the fingers and carry it up on the wrist. This done, take the ends round the wrist, fixing the point, cross them, carry them back again, and knot together. (3-7.) Take a second bandage and support the fore arm in the larger sling. (4.)

“ Wounds of the Thigh, Knee, or Leg.—Dress and bandage in the same manner as was directed for wounds of the upper and fore arm. (6-11.)

“ Wounds of the Foot.—Take a bandage, spread it out, and place the sole of the foot on its centre with the toes in the direction of the point. Draw the point upwards over the toes and instep of the foot; then take the ends forward round the ankle, cross on the instep, carry them downwards, and knot them together on the sole of the foot. (15-23.)

“ To secure Fractures.—Surgical or improvised splints may be adjusted to a broken limb by taking two triangular bandages folded broad or narrow, according to circumstances, and tying them securely, one above and the other below the fracture. (1-2-16.)”

The Clove-hitch is usually employed when we wish to obtain firm hold of a limb, either to fasten it down,

or to apply traction, as it is less likely to inflict damage than a slip knot. To make a clove-hitch, take hold of the middle of an unfolded broad roller bandage with the left hand and make a simple loop with the right; holding the first loop with the left thumb, the manipulator makes another similar loop, and grasps it with his right hand; finally by passing the loop last made beneath the first the clove-hitch is completed,

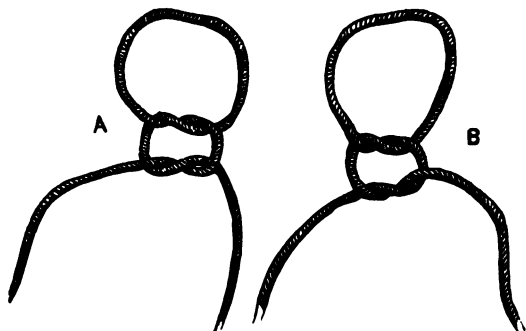


Fig. 15.

and it can be easily slipped over the limb to the required point.

The patient's skin should be first protected with a piece of flannel or some cotton wool over the part where the clove-hitch is fixed.

The Reef-knot.—A nurse should always tie a “reef knot,” the same as a surgeon uses when applying a ligature, for this kind of knot is certain to hold.

What is nautically termed a "granny knot" is very likely to slip.

In the "reef" both the ends of the thread pass either over or under the corresponding loop, whilst in the "granny" one thread is over and the other under. Any one can satisfy herself of the advantage of the "reef" over the "granny" by tying the two knots on a piece of string and comparing them. Fig. A is a reef knot; B granny.

The secret of invariably tying a reef knot is to make the same thread uppermost or undermost both in the first and the second tying.

CHAPTER VIII.

Burns and scalds—Poisons—Healing of wounds—Resuscitation of people apparently drowned or otherwise suffocated.

Burns and Scalds.—Burns and scalds vary in degree. In the simpler forms the skin is simply congested or reddened, and if the part is dusted over with dry flour and wrapped up, this is all the treatment that will be required. When the scarf skin or cuticle is raised and there is an effusion of fluid underneath, which shows itself in the shape of blisters, carron oil is a good application; it is made by mixing equal parts of linseed oil and lime water. Squeeze out pieces of lint in this mixture and apply it to the part, covering the whole with cotton wool to exclude the air. The same kind of dressing may be used in severe burns when the skin and parts beneath are absolutely destroyed, and an ash-grey sore formed. Extreme gentleness is necessary in the redressing of burns, as this operation causes great pain to the patient if roughly performed.

A small scald may be dressed temporarily with a solution of warm milk and water, and if handy, add a little carbonate of soda or some alkali. It must be borne in mind that after severe burns involving great

destruction of tissue, cicatrices are very apt to form during the healing, which may contract a joint, and so interfere materially with the usefulness of a limb. If the neck should be burnt, some distortion may occur by the head being drawn to one side.

Limbs should be extended by splints and other mechanical contrivances during the healing of a burn. As skin is such an important factor in respiration and excretion, burns extending over a large surface are more dangerous than even a deep burn confined to one spot.

Poisons may be introduced into the system by the mouth, or absorbed after being injected under the skin. In the latter case, if the patient come directly under notice the wound may be sucked, and bleeding encouraged by bathing the part with warm water; after-treatment consists in keeping the system up by stimulants, exciting the excretory organs, and if necessary artificial respiration must be resorted to.

Poisons taken by the mouth may be divided into narcotics, which produce insensibility by their action on the brain, and irritants which destroy all the tissues with which they come in contact.

In the treatment of poisons, try and get rid of the poison by encouraging vomiting; it is knowledge requisite for a physician to counteract the effect of poisons by means of antidotes. The most simple emetic is a large draught of tepid water, a table-spoonful of powdered mustard, or salt in warm water,

or to tickle the back of the throat with a feather or the introduction of a finger into the throat.

There are other means of causing vomiting, but they should not be resorted to without medical advice, such as one or two tablespoonfuls of ipecacuanha wine, or twenty grains of sulphate of zinc in water.

It might be well to remember that white of raw eggs, the administration of salad oil, protects the walls of the stomach and gullet in poisoning by irritants. Further, acids and alkalies form antidotes to each other. The alkalies suitable are, soda, potash, magnesia, or the salts of lime diluted with water. The acids usually ready at hand are orange and lime juice, or better, vinegar and water.

In narcotic poisoning, if the patient has swallowed the poison, after an emetic, walking exercise and coffee stimulation must be resorted to. In the more potent poisons little can be done after an emetic has been administered, but to try if possible to keep the patient alive by artificial respiration and warmth.

Wounds.—Wounds are usually divided into incised, lacerated, contused, punctured, and poisoned. The four latter classes of wounds do not heal kindly, and will benefit by medical skill being sought for their management, so we do not intend saying anything about them in this little work; they are merely mentioned to call the nurse's attention to the fact that she must carefully consider the class of wound she has to deal with in a case of accident or disease. She

must not think that because one wound she may have seen healed by a certain method, therefore all will yield in the same manner and be benefited by the same line of treatment.

Incised wounds may unite in four different ways ; first, by the direct growing together of opposite surfaces, or by opposite surfaces uniting through the medium of coagulable effused lymph, adhesive inflammation ; this is called union by "first intention." Secondly, by scabbing or incrustation ; it consists in the wound healing under a crust which forms an air-tight covering. Thirdly, by granulation or "second intention," where pus or matter is secreted and the wound fills up gradually from the bottom, as is seen in the healing of ulcers. Fourthly, by the growing together of two granulating surfaces. These two latter are the means by which lacerated and contused wounds usually heal. It must of course be understood that no wound can possibly heal without being cleaned from dirt, and all foreign bodies removed.

In a simple incised wound try if possible to get healing by first intention. The conditions necessary are, a healthy constitution, the perfect coaptation of cut surfaces, the absence of all inflammatory action, the exclusion of air, and a homogeneity of structure ; by this latter is meant parts corresponding in structure, for instance, it cannot take place between a muscular flap and the cut end of bone. The first thing to be done then in the case of a simple incised

wound is accurately to bring together and keep together the separated lips and sides of the wound; this can usually be effected by strapping. Next exclude the air, lastly guard against inflammation by placing the part perfectly at rest.

The Resuscitation of those apparently Drowned or otherwise Suffocated.—Numerous methods for restoring the apparently dead or drowned have been devised by different surgeons in this country, in America, and other places.

They each have their advantages and admirers. Dr. H. B. Silvester's method has been approved by the Fellows of the Royal Medical and Chirurgical Society, and Dr. Marshall Hall's are circulated by the Royal National Lifeboat Institution, and used by Her Majesty's Coastguard Service. They both commence with the following directions :—

In cases of apparent death, either from drowning or other suffocation, send immediately for medical assistance, blankets, and dry clothing, but proceed to treat the patient *instantly* on the spot in the open air, with the face downward, whether on shore or afloat, exposing the face, neck and chest to the wind, except in severe weather, and removing all tight clothing from the neck and chest, especially the braces.

The points to be aimed at are—first and *immediately*, the *restoration of breathing*; and secondly, after breathing is restored, the *promotion of warmth and circulation*.

The efforts to restore breathing must be commenced immediately and energetically, and persevered in for one or two hours, or until a medical man has pronounced life is extinct.

Efforts to promote warmth and circulation beyond removing the wet clothes and drying the skin must not be made until the first appearance of natural breathing. For if circulation of the blood be induced before breathing has recommenced, the restoration to life will be endangered.

TREATMENT TO RESTORE BREATHING ACCORDING
TO DR. MARSHALL HALL'S METHOD.

To clear the Throat.—Place the patient on the floor or ground with the face downwards, and one of



Fig. 16.

the arms under the forehead, in which position all fluids will more readily escape by the mouth, and the

tongue will itself fall forward, leaving the entrance into the windpipe free. Assist this operation by wiping and cleansing the mouth.

If satisfactory breathing commences, use the treatment described below to promote warmth. If there be only slight breathing, or if the breathing fail, then,

To excite Breathing, turn the patient well and instantly on the side, supporting the head, and excite



Fig. 17.

the nostrils with snuff, hartshorn, and smelling salts, or tickle the throat with a feather, etc., if they are at hand. Rub the chest and face, and dash cold water or cold and hot water alternately on them.

To imitate Breathing.—If there be no success, lose not a moment, but instantly replace the patient on the face, raising and supporting the chest well on a folded coat or other article of dress.

Turn the body very gently on the side and a little beyond, and then briskly on the face, back again, repeating these measures cautiously, efficiently, and perseveringly about fifteen times in the minute, or once every four or five seconds, occasionally varying the side. By placing the patient on the chest, the weight of the body forces the air out ; when turned on the side, this pressure is removed and air enters the chest.

The two foregoing illustrations show the position of the body during the employment of Dr. Marshall Hall's method of inducing respiration.

On each occasion that the body is replaced on the face, make uniform but efficient pressure with brisk movement on the back between and below the shoulder-blades or bones on each side, removing the pressure immediately before turning the body on the side.

During the whole operation let one person attend solely to the movements of the head, and of the arm placed under it.

The result is Respiration or natural Breathing, and, if not too late, Life.

Whilst the above operations are being proceeded with, dry the hands and feet ; and as soon as dry clothing or blankets can be procured, strip the body, and cover, or gradually reclothe it, but taking care not to interfere with the efforts to restore breathing.

TREATMENT TO RESTORE BREATHING ACCORDING
TO DR. SILVESTER'S METHOD.

Patient's position.—Place the patient on the back on a flat surface, inclined a little upwards from the feet ; raise and support the head and shoulders on a small firm cushion or folded article of dress placed under the shoulder-blades. To effect a free entrance of air into the windpipe—

Cleanse the mouth and nostrils, draw forward the patient's tongue, and keep it projecting beyond the lips ; an elastic band over the tongue and under the chin will answer this purpose, or a piece of string or tape may be tied round them, or by raising the lower jaw, the teeth may be made to retain the tongue in that position.

Remove all tight clothing from about the neck and chest, especially the braces.

To imitate the movements of Breathing.—Standing at the patient's head, grasp the arms just above the elbows, and draw the arms gently and steadily upwards above the head, and keep them stretched upwards for two seconds, by this means, air is drawn into the lungs. Then turn down the patient's arms, and press them gently and firmly for two seconds against the sides of the chest. By this means air is pressed out of the lungs. Pressure on the breast-bone will aid this.

Repeat these measures alternately, deliberately, and



Fig. 18. Inspiration.



Fig. 19. Expiration.

perseveringly, about fifteen times in a minute, until a spontaneous effort to respire is perceived, immediately upon which cease to imitate the movements of breathing and proceed to induce circulation and warmth.

Should a warm bath be procurable, the body may be placed in it up to the neck, continuing to imitate the movements of breathing. Raise the body in twenty seconds in a sitting position, and dash cold water against the chest and face, and pass ammonia under the nose. The patient should not be kept in the warm bath longer than five or six minutes.

To excite Inspiration.—During the employment of the above method excite the nostrils with snuff or smelling-salts, or tickle the throat with a feather. Rub the chest and face briskly, and dash cold and hot water alternately on them.

Treatment after Natural Breathing has been restored.—To promote warmth and circulation, wrap the patient in dry blankets, commence rubbing the limbs upwards, with firm grasping pressure and energy, using handkerchiefs, flannels, etc. By this measure the blood is propelled along the veins towards the heart. The friction must be continued under the blanket or over the dry clothing.

Promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, etc., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet.

Warm clothing may generally be obtained from bystanders.

If the patient has been carried to a house after respiration has been restored, be careful to let the air play freely about the room. On the restoration of life, when the power of swallowing has returned, a teaspoonful of warm water, small quantities of wine, warm brandy and water, or coffee should be administered. The patient should be kept in bed, and a disposition to sleep encouraged. During reaction large mustard plasters to the chest below the shoulders will greatly relieve the distressed breathing.

The above treatment should be persevered in for some hours, as it is an erroneous opinion that persons are irrecoverable because life does not soon make its appearance, persons having been restored after persevering for many hours.

CHAPTER IX.

Insensibility—Drunkenness—Apoplexy and compression of the brain—
Hysteria — Fainting fits — Epilepsy — Uræmia — Retention and
suppression of urine—Concussion.

Insensibility may be due to injuries to the brain or nervous centres, diseases of the brain, impurities of the blood, or the result of poisons introduced into the system. In cases of injuries to the brain there will be of course a history of violence.

Diseases of the brain and its membranes, or some defect in the blood supply, will induce apoplexy, epilepsy, or insanity.

It is difficult in some forms of insensibility to arrive at a correct diagnosis ; even medical men are liable to err. This being the case it is not to be wondered at that people who have not received a medical education should frequently make mistakes.

It is a good rule in cases of suspected drunkenness, when there is the least uncertainty, to give the patient the benefit of the doubt, and seek medical aid. Certain symptoms and signs lead one to suspect grave mischief, still be it remembered that no *single* sign or symptom can be relied on in forming a just

conclusion, for it not unfrequently happens that disease is complicated with the effects of drink. A man not feeling very well may take something to drink just before he goes off into a fit; because his breath happens to smell of spirits, we must not condemn him as drunk.

When **drunkenness** causes insensibility, the insensibility is not complete, that is to say, it is possible to rouse the patient by pinching him or howling into his ear. There is nothing particular to notice about his eyes or pulse, but the temperature of his body, if taken with a thermometer, will be found to be two or three degrees below normal. Hence the folly of people taking ardent spirits with the idea of keeping out the cold. The effect of spirits is primarily to increase the circulation of the blood, but this soon goes off.

The best stimulant before going out of doors on a cold winter's night is a cup of hot coffee.

The treatment of insensibility caused by drink is to keep the patient warm, and administer an emetic.

Apoplexy and Compression of the Brain.—In apoplexy a blood vessel due to disease of its coats gives way, either in the substance or on the surface of the brain; this effused blood not being able to escape on account of the unyielding nature of the cranium causes compression of the brain from within. In the case of an accident, where the bones of the skull cap are smashed in, compression of the brain is the result,

but in this instance the compression is from without. The symptoms of compression of the brain and apoplexy are similar, so we will speak of them together.

In the first place the attack is more or less sudden, and the insensibility is complete, that is to say, it is impossible in any way to rouse the patient, he is unable to speak, and unconscious alike to all impressions. The pupils of the eyes become fixed, there may or may not be some squinting of one or both eyes, and the conjunctiva covering the eye-ball is no longer sensitive to the touch. A peculiar rasping, loud, sonorous breathing shortly supervenes, spoken of as *stertor*, and during expiration the cheeks are puffed out. The pulse is laboured, wiry, and not easily compressed.

Paralysis either of one or both sides of the body is the result.

Until medical aid is procured, all that a nurse can do in these cases is to place the patient in the recumbent position with the head slightly raised, put a mustard plaster on the nape of the neck, and apply warmth to the extremities.

Hysteria.—People who indulge in this complaint, and behave in the eccentric way they do during the attacks, would assuredly refrain if they had the power, that is, if they were in perfect health of both mind and body. The management of this disease, for it is a disease, requires firm but kind treatment,

harsh measures should not be resorted to. A woman never hurts herself in an hysterical fit, therefore why try either forcibly or by persuasion to restrain the attack? If a girl wishes to have an hysterical fit, by all means let her have an hysterical fit; conduct her to an empty room, place her on the floor, and let her have a fit quietly by herself. Mothers ought to instil into their daughters habits of self-discipline and control, also take care that they have plenty of occupation and out-door exercise.

The premonitory symptoms of this disorder are unaccountable fits of crying or laughing, followed by gesticulation and violent convulsions. This is not the place, nor is it our intention here to write a treatise on the various and numerous grades of this malady, and the peculiar way in which it manifests itself in different individuals.

Attention is merely called to it in passing, to point out that should any of my readers or their friends be afflicted in this way, they had better seek medical advice; in mild cases it may be due to debility, unhealthy occupations, uterine trouble, disorders of digestion, an utter disregard of the laws of health, or a hundred other remediable causes.

Fainting Fits are due to an insufficient supply of blood to the brain. This may be caused by impurities in the atmosphere we breathe, vicissitudes of temperature, such as great heat or excessive cold, pain, fright, grief, or joy. In the treatment of fainting, as in all

other fits, the primary efforts should be directed if possible to remove the exciting cause. Surround the patient with pure air, loosen any clothing that may be constricting the windpipe or air passages, place the sufferer's head lower than the trunk.

In mild cases an attack may be warded off by pressing the head down between the knees, and thus encouraging a flow of blood to the brain. If this should prove insufficient, make the patient assume the recumbent position, take away all pillows and lower the head; apply hartshorn or smelling salts to the nostrils, and if the patient can swallow, give him a teaspoonful of hot coffee, or warm brandy and water. Medical aid should be procured if fainting fits follow each other at short intervals.

Epilepsy is a disorder of the brain; the attack is sudden, but it is often ushered in by a sharp cry. The patient falls, and the following signs soon show themselves: great convulsions of the limbs, distortion of the facial muscles, foaming at the mouth, and partial insensibility.

In these cases a bystander can be of help by placing the sufferer in such a position that he cannot injure himself, also prevent him from biting his tongue by fixing a small cork in between the teeth; tie a piece of string to the cork, it can then be easily recovered should the patient, in a convulsive fit, unconsciously swallow it.

There is no necessity for two or three people

roughly to seize and sit upon a patient in an epileptic fit, and it is a fallacy and waste of force trying to restrain the convulsive movements.

Uræmia, a blood poisoning from kidney mischief. In this disease urea and other products, which ought to be excreted by the kidneys, circulate in the blood and cause the following symptoms: muttering delirium; twitching of muscles; convulsive movements; at first partial, and subsequently total insensibility; also those more common signs of kidney mischief, œdema of eye-lids and legs, with or without well marked dropsy. A nurse ought clearly to understand the difference between *retention* of urine and *suppression* of urine. By retention is meant that the urine is retained in the bladder, and if after placing a warm poultice on the lower part of the abdomen the patient is still unable to pass it, the water will have to be drawn off by means of a catheter.

Suppression of urine is a much more serious trouble, for in this case no urine is secreted by the kidneys.

Concussion of the Brain causes more or less insensibility. To narrate the history of a case of this sort may help to fix the more prominent symptoms upon the memory.

"About six months ago I was called in to see a lady who had injured her knee in a railway accident. The patient told me, in answer to questions, that she was sitting in a railway compartment with some

others, and was just nearing a station when the train ran into something on the line, and the passengers were precipitated into each other's laps, upon recovering themselves some got out, but she stood at the open door of the carriage.

"At this juncture another tremendous bump took place, and she was precipitated on to her head on the platform.

"From this time, what became of her, and how she got home and into her bed she does not remember. She told me that she had not vomited, but complained that her bed was heaving up and down, and the room seemed to be twirling round; she further complained of head-ache, and pain in the left knee. Upon passing my hand over her scalp, I discovered a bruise on the left side of her head, there was also occasional twitching of facial muscles, and the muscles of right arm and right leg, with pallor of the countenance.

"On making inquiries, I elicited from the serving-maid that her mistress *had* been sick."

The symptoms then of concussion are loss of memory, sickness, confusion of ideas, stupor, irritability, muscular twitching, impaired vision, prostration, and sometimes external bruising. The treatment, until a doctor comes, would be perfect rest in the recumbent position; draw down the blinds to darken the bed-chamber; apply cold to the head and warmth to the feet.

CHAPTER X.

Personal and family hygiene—Hints to women about to enter the nursing profession—The use of training.

Practical Hints on Health, Family and Personal Hygiene.—See that your drains are properly ventilated, trapped, and flushed. The escape pipe for the foul air which collects in water-closets should be carried always a little above the roof of the house. It is possible to live in a slowly poisonous atmosphere without any stench being perceptible. Be careful not to hire a house in which the drainage is conducted down the centre or underneath the basement, for as the foundations settle, a small crack necessarily forms between the drain pipes, however carefully laid, and the foul air escapes. A good sanitary test is to pour some carbolic acid down a neighbour's closet, if this can be smelt in your sinks or drains, it shows they are not properly trapped.

It seems hardly necessary to remind a householder that he ought to have a separate cistern for drinking and closet use.

Water companies do not always undertake to give a continuous supply of water, so that it is most important that the cistern where the water is stored

should be well covered in by an accurately fitting lid, and cleaned out frequently. The over-flow pipe from this cistern must not be conducted direct into the sewers; outbreaks of fever have been traced to this cause. The overflow of water should pass along a short open drain into a trapped grating which communicates with the sewers.

In re-papering a room always take care to have the old paper removed ; fancy living or sleeping in a room, as many people do, with the wall papers four or five deep, each one with the exhalations of a generation in process of decomposition. A separate bed should be provided for everyone in the house. Especially should children be prohibited from sleeping together, contaminating each other with their excretions from lungs and skin ; it is even worse for a child habitually to sleep with a grown-up person, they only become pale and consumptive. Before getting into bed do not leave your day wearing apparel folded up in a heap, but separate each article so that it may be aired, especially those articles worn nearest the skin.

Under-linen and flannel should be changed at least twice a week ; never wear any under-garment by day which is used at night. Always throw back the bedding, and expose it, especially the blankets, to fresh air and sunlight in getting up in the morning. Never fold up a nightshirt, but hang it on a peg to air, or spread it on the back of a chair.

Boys and girls, if left to dress themselves, will usually get out of bed, jump into their clothes, sponge their face and hands, and come down stairs. Children should be taught how to wash all over with soap and water, and rub themselves dry with a rough towel.

Tight-fitting clothes over the chest and round the waist must be prohibited.

Use stocking suspenders in preference to *garters*, but if the latter are used, always wear them above the knee ; when garters are put on below the knee they hinder the venous current of blood towards the heart, and so engender swollen legs, varicose veins and ulcers. High-heeled boots and shoes alter the perpendicular line of the body, and cause fatigue, pain and deformity, also tight boots are a great mistake ; to avoid corns and bunions wear boots which allow plenty of room for the toes, and for walking have thick firm soles.

It need only be mentioned with respect to corsets and tight stays, that these things should not be worn. Young growing girls should be encouraged to practise gymnastics on a small scale ; it strengthens the spinal and other muscles, also increases the chest capacity. A trapeze and parallel bars can be erected in a dressing room or nursery, and dumb-bells supplied, at a very small cost.

Women often suffer from constipation and headache, usually caused by want of exercise or neglect of the calls of nature. Exercise is imperative, a positive

necessity ; in cold weather it accelerates the circulation and promotes warmth.

In large cities, kitchens are unfortunately obliged to be made at the basement ; where practicable, it is much better to have the kitchens built out separately.

A mistress should carefully watch that her kitchens, sculleries, and cellars are kept scrupulously clean ; she should never allow rubbish of any kind to accumulate, and the cook must be instructed to inform her directly there is the least smell from the sinks or elsewhere.

Never allow vegetable matter to decompose in or near a dwelling-house. In London the refuse should be burnt.

When fever occurs in a house people usually ask, Where could we have caught it ? Please remember that fevers are often bred and nurtured by want of cleanliness, absence of ventilation, and a total disregard of the laws of health.

Much of the headaches, general malaise, and disinclination which servants have to get up in the morning is due to faulty ventilation.

If there is no ventilator in a sleeping room, one of the windows should be left open a little way at the top all the year round. To maintain health, foster and encourage habits of regularity, cleanliness, moderation and cheerfulness, attributes which nature loves. It is the duty of mothers and mistresses of lady schools to warn young girls of a certain time in the

month when it is wise, nay, absolutely necessary, to avoid undue exertion. A great many of the diseases and illnesses which women suffer from may be traced to neglect of this precaution. At these times girls should rest from much walking and other exercise; hot or cold water bathing must be prohibited, tepid sponging of the body is alone permissible. Many a poor girl has lost her life or been rendered a confirmed invalid by getting wet feet and catching cold at these periods. Irregularity or excess must be at once reported, and proper medical advice obtained.

Girls often order fires in their bedrooms when dressing for a dance; this is not really necessary, but to find a good fire burning on their return from a dance might often be the means of preventing an illness.

Young lads at school or home for the holidays also want watching. Should they appear languid and shun companionship, it shows they are out of health. This may perhaps be due to pernicious habits of which they little know the consequence, but if corrected early often saves them becoming mentally deranged.

The laws of this country allow a man to do pretty much as he likes, so long as he does not injure his neighbour. To evade the vaccination law, or to fail reporting a case of infectious disease, is to injure one's neighbour, and such conduct ought to be punished. The Vaccination Act, if carried out, would be the means of arresting the scourge of small-

pox, but it is impossible to keep a community healthy by Acts of Parliament alone. It is everybody's bounden duty not only to have their children properly vaccinated, but also to be re-vaccinated at the age of puberty; this would be the means of thoroughly stamping out this disease. Some mothers have an aversion to lymph being taken from their baby's arm; this is mistaken kindness. If their baby has what is technically called "a good arm," it is a pleasant feeling, and good for the child to have some lymph taken away.

Every householder should assist the medical officers of health by at once reporting an outbreak of scarlet fever, or any other infectious illness which may occur to their knowledge.

Hints to Women about to enter the Nursing Profession.—There is no doubt the art of nursing requires special mental and social qualities, also power of physical endurance; further, these qualities require culture.

Before a woman embraces this calling she should ask herself, Am I possessed of these qualities?

Previous to applying at any training school, she should get a certificate as to her state of health, signed by her usual medical attendant or family doctor. A woman is not fitted for a nurse who has any noticeable deformity of body; she should have command over all her senses, especially that of sight, hearing, smell and touch. There is nothing unwomanly in the work of

a nurse; a woman of cultivation and refinement is a valuable adjunct in the sick-room, and carries out instructions more conscientiously than an uneducated Gamp. As has been written: "In a complete training institution a probationer is taught superintendence, ministration and house work. Five or ten years as a nursing sister in a hospital should no more disqualify a young lady for a future and different life, than going to the bar for a few years should unfit a man for the life of a country gentleman;" but a lady must pause before she rushes into work, the drudgery of which is stern and irksome at the commencement. Except in exceptional cases, she should not begin the work until the age of three and twenty has been reached, and she has formed some definite ideas of her own, not likely to be changed or influenced by every puff of doctrine that crosses her path. Do not choose nursing as a means of earning a living; unless you have a decided taste for it you will assuredly find the work most trying. Women of a romantic turn of mind, who are attracted by a becoming dress, or a yearning for notoriety, will never succeed as nurses.

A woman is unfitted for a nurse who is not truthful and sober; also fussy or slovenly women are out of place in a sick-room.

By truthful please understand the word in its every sense, and be sober not only in abstaining from excess in drink—that is all important—but be sober in conduct, be sober in dress. With respect to that

dreadful scourge "drink," if you are unable to resist that temptation, do not come near us, the sick-room is no place for drunkards. A nurse must be firm, but she should also be sympathising and gentle ; let her show forbearance and unselfishness, and cultivate a cheerful and contented disposition.

One sure method of making efficient nurses is to interest them in their work, hence the great advantages of aural and practical instruction. It has always been found that a woman who is fitted for a nurse is ready, nay, eager and grateful, for instruction.

Although unfortunately in some hospitals clinical instruction is often slurred over, it is clinical or bedside instruction which is most useful and most attractive.

These are matters which materially influence a woman in the choice of a school. She should attach herself to a hospital where the matron is a lady, and herself a skilled and trained nurse.

A woman may have had experience in nursing, but if she has not been trained she will fail to make a good matron. Attach yourself to a large hospital where there is plenty of work to be done, and experience to be gained.

If a lady takes up nursing with a right spirit, and has a love for the sphere, she will soon dislike the tempting pursuits of former days, and get so fascinated with her work, that she will at one and the same time spend a useful and happy life. This is not a theory

which is now being propounded, it is what one knows and sees in practice. Some of the happiest women have spent their lives in the wards of a hospital. A woman must not take up nursing with a view to making a fortune ; exaggerated statements and ideas are prevalent as to the earnings of nurses. There are two classes of women employed as nurses ; the one are the daughters of small respectable tradespeople or artisans, these command wages varying from £18 to £30 a year, and sometimes a little more ; this is exclusive of uniform, board and washing.

There is a broad distinction between that peculiar class of women who think themselves ladies, and those who are ladies. In the nursing world there is no opening for a woman who apes the "grand lady."

Ladies are employed in hospitals as ward sisters with the happiest results ; they command a salary of about £35 to £40 a year. Some few who have a talent for organisation and are otherwise qualified for the posts, become night superintendents, instructors of probationers, under-matrons, and matrons ; their salaries average from £60 to £100.

There is no doubt about it that the best nurses are to be found in those institutions which employ ladies as heads of departments. It is unadvisable to attach oneself as a probationer to a hospital or infirmary where flashy, incompetent, untrained women are placed at the head.

Managers of hospitals sometimes try to improve

their nursing staff by getting refined trained women in to fill up vacancies which may occur amongst the ward nurses; this never answers. It is almost impossible for a woman to surmount the difficulties she will encounter, and the obstacles which will be thrown in her path. If managers of hospitals or boards of guardians are really actuated by a true and laudable desire to improve their nursing staff, they must strike at the fountain head and select *trained* and skilled ladies to fill the important posts of matrons and superintendents; these women will soon attract probationers, and surround themselves with competent subordinates.

The use of Training.—Manifold is the use of training; it exercises the memory, cultivates forethought, and above all, it instils accuracy of observation and implicit obedience. Besides more work, work of a better quality can be got out of a trained woman than an untrained woman with a less expenditure of force.

A trained woman, one who knows how to manage her own health and works on a good system, will nurse a patient much better than a relative if a muddler, although the latter may or may not be far more devoted.

Trained nurses have got into discredit with some people, by women being sent from nursing institutions "as trained nurses" who are in reality not trained at all. If their past history was carefully inquired into, it would invariably be found that

either they had been at a hospital which did not pretend to train nurses, or they were women who had been sent away from some training school as incompetent.

There are very few certified monthly nurses who have ever been trained. It is hoped ere long there will be an Examining Board formed, which might consist partly of well known trained lady nurses and doctors, to certify to the proficiency of nurses and so protect the public from imposition.

To get plenty of practical work should be the first aim of a nurse, and during her spare time she could advantageously study Physiology, Hygiene, and the rudiments of Anatomy.

The general principles of these sciences are not only useful to nurses, but the acquisition of them tends to enlarge the capacity, and strengthen and develop the faculties. There are other things which are subservient and essential to these sciences, notably the *Art of Cooking*.

Some knowledge of mechanics will also help in the adaptation of appliances.

What has often been written and said will again bear repeating: "It is far better to learn a little well, than a great deal imperfectly. Whatever a nurse thinks proper to study in the science of nursing, and whatever she learns in the art of nursing, let her always strive to be thorough."

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